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A.

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JULY/AUGUST 2009

Just Window's Address is at the heart of the master suite that spans the entire second floor of the house that was project house. See "Hillside Haven," page 90. By Michelle HANDEL

home stretch

features

Hillside Haven 90

Despite a tight schedule and some delays, the Santa Barbara project makes it to the finish line. By MICHELLE HANDEL

Desert Star 102

A new whole house home in Tucson, Arizona, is designed to blend in with its desert landscape. By DIANA FOX

Homeowner's Handbook: Concrete Paver Pathway 113

A step-by-step guide to laying an attractive and durable new walk. By MARK FINKEL AND TOM RABIN

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Take a walk past at T.O.J.'s new fall project, an 1850s row house in Charlestown, Mass. By JOHN GILBERT

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Green, recycled glass, and native plants join forces to create a beautiful rooftop garden. By JAMES KIM

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Here, 18 classic styles and when and how to use them. By WILLIAM JOHNSON



SEE THE IMAGE, P. 124



SEE THE IMAGE, P. 129



SEE THE IMAGE, P. 129

cover This 600-page landscaping handbook begins with a list of the most popular plants to be planted in the Northeast. Massachusetts "Top 50" of landscape designers are included. The book "All through your mind" includes a list of 50 plants to be planted in the garden. For detailed instructions on creating the perfect garden, see "Homeowner's Handbook: Concrete Paver Pathway," p. 113. PHOTOGRAPH BY KELLER & KELLER

PHOTO: JAMES KIM; FENCE: JAMES KIM; FENCE: JAMES KIM; FENCE: JAMES KIM



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—Architect, contractor, and homeowner Andrew Lind

PHOTO BY WHITE, P. 40

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PHOTO BY WHITE, P. 36

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Separated at Birth

I'm surprised that *Two and Two* didn't "detonate" about which style of glass to use in the Birkhof, front door ("Opening Statement," January/February 2000). Don't anyone else see that the dual light-bulb lights shown for the door are closer to those in the classic F.O.M. blueprint window graphic?

KYRON FORD, GERMANTOWN, MD, via E-MAIL

Dimensional Bleeder

The dimensions of a "13-square-foot kitchen" (if I were a square) ("General Noob," House Calls with Steve, May 2000) would be just a little less than 52" by 52"—hardly enough room for a single. The difference between 10 square

feet and 13 feet square is the difference between a small kitchen and a small closet.

ERIC RUSSCHKE, MENARD TEXAS, via E-MAIL

Capt! The figure we need on our headline should have quoted another one: the space described in the article was a fully-equipped 350 square-foot kitchen.

Headle With Care

Plumbing village seminars, workshops, and slidecasts for audio and video companies can be a wonderful way to continue their use in this modern era of built-in closets and cabinets ("The Joins, L'Amore," The Details, March 2000). However, as your article implies, the place stuff withstand the weight of these sometimes very heavy appliances. Cutting the back out to accommodate the appliance's depth weakens the structural integrity—and might trash the antique's collectible value. I have a Black Forest carved sideboard that bowed under the weight of a television placed in its center cabinet. If I have to be completely dismantled and reconstructed, and has lost its original value. Having a knot.

significant antique dealer look at your furniture prior to doing any invasive work might save you heart turning a \$5,000 piece into a \$500 anti-rustment, under

BLANCA A. FORD, BOSTON, MASS.

My Idea

Reading the letter "No-Hider Closet" (Junk Norm, May 2000) transported me back to 1980 when I helped make a friend's pump-pump problem. One night, I noticed his pump was running continuously. We found that the waste being pumped out was washing through the wall, seeping out, collecting in the curbs, and being pumped out again, only to fill the ground that had just been drained. To break the loop, we trench in a horizontal direction to carry the discharge well away from the house. Success. For years after, the pump ran only on occasion. Simple solution fix. BRUCE M. BROWN, FULTON, N.Y., via E-MAIL

Time Is Money

I'm confused by an inconsistency in "More or Improver" (Finances, May 2000). It states that "renovating can be immensely lucrative" and

follows up with the example of putting \$25,000 into improving a \$150,000 house and selling it for \$150,000 to yield a two-free gain. However, the "Money Clip" sidebar shows a detailed list of remodeling costs and their respective effects on resale values, and explains that the best return on percentage for is 90 percent, in order to "turn a profit two-free," you first need to find a renovation that will result in a profit!

BRUCE M. BROWN, FULTON, N.Y., via E-MAIL

The resale value shown in the chart may depend on houses sold within one year of being remodelled. But, as the article notes, it's more likely you'll turn a profit if you sell at least three years after renovating.

Out Your Motor Running

I would like to point out that the capacitor in "Garbage Disposal" (Bland to Know, May 2000) seems to be misinterpreted. Capacitors have done so with starting the movement of the motor than with controlling the power. When the switch is turned on, the capacitor releases a stored charge to the start winding, which starts the motor by "kicking" it in the proper direction. The motor's power is a function of many of the disposal's individual characteristics, such as the length and configuration of the windings and internal friction. Also, capacitors are used in all AC motors, not just high-end models. JAMES L. LARSEN, BURLINGTON, N.Y., via E-MAIL

Leaving Towels

In searching for an older home, I encountered numerous examples of the "tipping chimney syndrome" mentioned in "A Tale of Two Stories" (May 2000). I wondered why houses exhibiting otherwise excellent craftsmanship would fall short on the necessary heating chimneys that were not aligned with the fireplace. A home inspector told me that the chimneys built in most



fireplaces were often laid up at an angle to prevent rain from falling directly into the furnace. The water droplets landed on the chimney's slanted interior walls and evaporated from the steam that began reacting the furnace.

BRUCE M. BROWN, FULTON, N.Y., via E-MAIL

Battens Uncovered

I share the type of gutter cover shown in "Hired the Gutter" (Upkeep, March 2000). It does not work well in my cold Midwestern climate when the following conditions occur simultaneously: temperatures below freezing, snow on the roof, and bright sun. The sun melts the snow, which trickles onto the cold metal cover and freezes. Ice then clogs the narrow opening, forcing icicles. The covers are cutting off when I get new gutters.

JAMES C. DERMES, SEVERNA PARK, MD

Woe Child

I thought you would like to know that The Old House is training the next generation in tool safety. My three-year-old grandson, who likes to watch the program with me, received a toy tool, along with tools to "repair" it, for his birthday. When he started to demonstrate the use of his new power drill, he tripped and ran back to his room yelling, "It's longer!" When he came back he had on his "safety glasses."

MARTHA BERRY, ROCKFORD, ILL.

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punch list

submitting a list of items immediately after an inspection to the inspector or administrator job

May 2000

One of the housewreckers' mottos is "Cleanly done is finished." (page 102) was pulled accurately in one place. The second mottos in "My Money" (It's also pulled in one place) is "Clean" was the phrase copied on the house's check.

PHOTOGRAPHY "Crisp, Clear, Color" (page 102) was pulled accurately in one place. The second mottos in "My Money" (It's also pulled in one place) is "Clean" was the phrase copied on the house's check.

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Race to the Finish

THAT VIEWERS CAUGHT ONLY A GLIMPSE of the last three days of the Santa Barbara project—a blur of nearly 40 workers sprinting to finish before the show's wrap party and last taping. The countdown began in the master bedroom where, just after installers laid the floor, decorator painters rushed in to install wainscota before heading downstairs to polish off the bathroom's inset. Meanwhile, other painters finished the walls as paperhangers scrambled to cover the guest bedroom, hot on the heels of carpet layers stretching deep pile. The day before the final shoot, Richard Tiedebrey installed bathroom fixtures while mopping around them. "It was a superhuman effort by everyone," he recalls. The morning of the party, landscapers were still working on the garage-roof garden while Norm was installing the fireplace surround. Yet everyone finished in time for the festivities. "There were a lot of relieved people on the porch," recalls the show's producer, Bruce Irving. "I bet that's why everyone thought the sunset was especially beautiful." —Nelson Handorf



Paste Perfect

Applying wallpaper pastes the traditional way—with a brush or galal rubberman by a messy, strenuous, and time-consuming job. So when paperhanger Philip Oeller went to work on the walls, borders, and ceiling of the guest bedroom in Jon Wilentz's Griffiths Boulevard, he made sure he brought along his trusty pasting machine. Usually consisting of a hand-cranked roller, the apparatus smears the paste—usually two shabby-stemed cylinders, the lower of which

sits in a tray of paste. "I've been wallpapered since I was a kid helping my dad," says Oeller, who brought his to the late '60s. "It puts paste on quickly and uniformly, much better than a roller does." Available for rent at paint or wallpaper stores, these machines can cut work time in half and will handle papers of various thicknesses, in widths up to 30 inches. They also have built-in rollers for smoothing and creasing them that ensure the smoothest of paste left on the paper. "And what's more," says Oeller, "they'll save your arm from getting tired!" ■



No Rest For The Weary

With the taping of the Santa Barbara project completed in March and the next TCM season not starting until May, you'd think the guys would have managed to take the wind off. Actually, what are only seven days about? Not true. Take show coordinator Thomas, for example. Between work on House Calls for the magazine, his contributions to a new 30-A-page book—The Home Owner's Manual: a vital reference from maintenance guide to The Publishing Windows 2000—and a packed home show appearance schedule for nearly 50 in a fairly old city, Richard Tiedebrey didn't get a moment's rest off this summer. But during the break he did design a lighting system and touring contractors in vibrant lighting and high velocity sound-diffusing. Norm was spending a week away in April, but the View Home Workshop duties are year-round. And Quincy—well, he hasn't taken time off from his general contractor work in more than 30 years. (At press time he had four projects going simultaneously.) "I'm a hard-core 40 when I look at work to go to Florida," says the liberalist. "But for me, a couple of days go instead to being a long sleep." —

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Johns Manville

HOUSE CALLS WITH STEVE



A Silvery Lining

In a turn-of-the-century bungalow, the kitchen is carefully planned—and furnished—to look unplanned

BY REGINA MURPHY

Bringing a rundown 1890 Arts and Crafts-style bungalow in Coronado, California, into the 21st century was a labor of love for a family of five. But the family's love for the house was not just a sentimental thing. It was a practical one. "Most people considered the place a teardown," she says, "because it needed to be completely overhauled from top to bottom. But I saw its potential." That's because it was built by the same man who built the first house in the neighborhood. "I grew up in a bungalow in Berkeley, and there's something about this style that speaks to me," he says. "I can see why she wanted to restore this place."

Coronado, a long-established resort community on a peninsula between San Diego Bay and the Pacific Ocean, was initially developed as a haven for the rich. Old-money told Pat that his house had been designed by a noted local architect, William Stocking McLeod. For Pat, whose primary residence was in Palo Alto, the house looked like the ideal spot for her and her husband's retirement. Until that time came, they and their sons could use the bungalow as a getaway on occasional weekends, but she also hoped to use it as a place for their family to live.

A born operator, Pat bought the house in December 1996, and secured her first rental for the following July. The quarterly rent was \$1,000, and her crew charged her \$100 to get the house into move-in condition. Big tasks included a complete rewiring and repainting. And then there was the kitchen. It might have worked for previous owners, but Pat didn't want to cook out.

PROBLEM

The kitchen, like most of the rooms, suffered from sagging—and cheap—attempts at modernization. "It was so depressing," says Pat. When earlier homeowners added bathrooms on the second floor, they simply added the plumbing lines above the windows over the kitchen sink and located them in behind 8-foot high soffits. When they arrived more cupboards, they stuck them in with only a few. A sloppy peninsula bisected the 12-by-10-foot room, and three layers of linoleum covered the floor. Worst of all, virtually every window

Patricia DeGroot surveyed her new kitchen (BOTTOM), which had been cut by a peninsula (TOP). She pointed her own the case line and in the exterior—then added a 30-pass door to bring in more light.



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HOUSE CALLS WITH STEVE

was blocked. There over the sink *lived* a laundry stack, two refrigerators were covered over by an enormous linen so that housed the water heater, yet another had been sealed off where a stove fit.

While all this clearly needed fixing, Pat decided she'd rather live with the kitchen's unimproved footprint—or come to the house to the backyard—than alter the footprint of the house. "Because this isn't her everyday kitchen, Pat was willing to make certain compromises," explains Steve.

SOLUTION

To ready the room for its life, Pat gutted it and ripped out the sink, the linen so, and the windows, which she removed and relocated. The demolition resulted in a brighter space, but it also revealed that the Douglas fir floors—which are in three different directions beneath the linens—couldn't be salvaged. Pat chose a high-pressure wood-laminate to replace it. "I wanted a floor I wouldn't have to worry about with meals or my kids."

Pat, who designed the new kitchen layout herself, created a modern version of the so-called unfitted kitchen aesthetic to the Arts and Crafts period. In these

kitchens, layouts followed no plan and virtually every appliance and cabinet stood alone. In Pat's update, the rule lightly stayed. Douglas-fir Shaker style cabinets only along the sink wall, and the sink built-in appliances are the dishwasher and a grill. The refrigerator and range, placed against the opposite wall on the same position as their predecessors, stand independently, as does the table that divides the room.

"A large cook might find the layout frustrating," says Steve, "because you have to go around the table to get anywhere—but it serves this lady's purposes." To make the arrangement more attractive to her guests, Pat factored in a small second sink near the dishwasher to handle the extra glassware a family typically uses during the summer.

Pat had been searching for a 13-90-cu.-ft. stove when a friend back home offered her a second-hand commercial-grade refrigerator, range, and hood at a great price. The husband rented a truck and drove them down. Pat particularly likes the refrigerator, because it is only 24 inches deep. But at 48 inches wide, at a hefty "It took those guys to move it in here," she says.

FINISHING TOUCHES

To enhance the unfitted look and complement the room's low-level appliances, Pat placed a 30-by-70-inch kitchen table with a wooden top in the center of the room; it doubles as a work surface, taking the place of a traditional island. A Craftsman-inspired lighting fixture provides task lighting for food preparation as well as overall illumination for dining. To display her cookware, Pat bought movable wire shelving on wheels. For the counterpane, she chose a beautiful porcelain tile. The backsplash is painted marble in a neutral hue.

WHY WEYBURN? Steve says that the Craftsman style of the kitchen—and the rest of the house—has made believers out of Pat's husband and sons, who've come to love the place as much as she does. "We serve," Pat adds, is now "a small piece of luxury gourmet, too."



The renovated kitchen fits perfectly within the old footprint. The cabinet run on the window wall didn't need to accommodate a doorway. A pantry cabinet fits in for no old work in.



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ASK NORM

How to replace rotted beams, dampen outside noise, and make gouged siding smooth

WIND IN THE CHIMNEY

We live at the bottom of a canyon that gets rather windy in the winter, just when we'd like to use our fireplace. Unfortunately, wind gusts blow the chimney smoke back into our house. Do you have any suggestions for how we could prevent this?

—JOHN & LARRY HANSEN, GUNNISON, COLORADO

You'll see our solution on top of many chimneys along the coast of Oregon, where winters are wet, wet, and often windy. It's a simple device made of steel metal that points like a weather vane to automatically shield the fire from downdrafts. When I had a similar problem at my house for a while, master Larry Bellanca solved it by taping the chimney with a bluestone slab that sits on four steel brick pillars. The slab prevents wind from blowing smoke straight down the chimney, and I haven't had any smoke come into the house since.

STUCK ON LINOLEUM

We recently bought my husband's old family home, which was built back in the '30s—apparently by enthusiastic smokers. I say that because practically nothing in the house is fit to eat now. All the floors are so much too short, for example, and the ceilings are 7 feet 8 inches high. And it's the flooring that's giving us fits just now. Some sort of tile has the linoleum stuck only half in the concrete slab. The tile comes off in layers, leaving one layer and the tile behind, and when I follow up with a squeegee, another room up with the tile five kind of cemented to boards, but off they come in bits when the squeegee hits.

—MICHAEL DOW, HILMA, GA.

Before you proceed any farther, consider this: Much of the vinyl and linoleum flooring made before 1950 contained asbestos, and there's no way for you to know if yours does just by looking at it. To be safe, contact a certified asbestos abatement contractor and let a pro do the removal.

RECYCLE PARADOX

I'd like to put things on a backseat so that the whole thing will swing away from the wall, leaving a second storage area. But I don't know how to connect the hinges or ensure that the case swings smoothly without sagging, even when loaded with books. Any ideas?

—KIM R. GANNETT, SAN BERNARDINO, CALIF.

You could try the longest 3/8-in. rods to create a hidden swing room door at the entrance proper house. They're called S&S

extended hinges, and fit into holes bored in the woodwork. But to support the considerable weight of a bookcase, you'll need to secure a pair of cables to the beams of the ceiling—put holes three inches behind the rail. For maximum strength, I'd build the shelves, including the back, out of 3/4-inch plywood (ironically I'd use hard-wood glued into discolored square-bored grooves), and fasten every joint with glue and screws. You'll probably have to add more plywood on the hinge side to make sure the hinges are securely housed in their mortises.

HANDICAPPED THRESHOLDS

We are starting to renovate our 1987 house in Glendale, Arizona. It has eight (8) exterior doors, with a transom window above each one.

The jambs are in fair shape, except for some deteriorating wood near the thresholds, but the doors and transoms are looking pretty bad. Should we replace the doors and transoms, or at least some other solution?

—KIM AND ALAN BROWN, MINNETONKA, MINN.

Save them all, if you're willing to roll up your sleeves and do something about fixing them—that's the best way to maintain the house's historic feel. If the doors themselves are structurally sound and it's only the finish that's worn, I'd remove the doors, take off every piece of hardware, and then slowly strip the finish yourself, or let a commercial outfit do it. Once you're down to bare

wood, fill any splits, grooves, or cracks with epoxy or glue at hardware wood profiles before you repaint. (See "Star Paints," March/April 1996, p. 49.) As for the jambs, I'd just fit them in place by cutting out the rot and filling those areas with fresh wood. Just be sure to break a coat of primer over all sides of any new wood before final installation.

HOW WET IS MY GARAGE?

The Peace on Earth brand sump pump is built to be hooked up and has such a serviceable automatic problem in the garage that it fits the bill of standing water items on the floor. Any tool left in the garage gets rusty, and the water leaks up the wall between the two garage doors. Is there any product we can use to prevent this problem?

—JOHN GANNETT, HANSON, WIS.

This doesn't sound like condensation to me. I'd be surprised if there was anywhere near enough humidity in your cool Wisconsin air to equalize at standing water. More likely, your culprit



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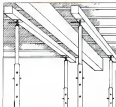
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ASK NORM

in the bedroom, which is probably diverting water into the gaps through hairline cracks at the joints between the slab and the foundation wall. There might even be an underground spring that's forcing water into your garage. First, try sealing up all cracks and joints with hydraulic cement. If that doesn't work, you will need to create a landscape drainage system that stops the water from getting underneath the slab. (See "Swamp Fox," March/April 1994, p. 54.)

WHEN A BEAM SAYS NO

We live in an Ontario cottage built in 1946: a square, single-story house with deep-workings. The 6x18-inch main support beam in the basement, which is held up at each end by the stone foundation and in the middle by various brick pillars and water pipes, has heavered and cracked in spots. We'd like to replace it, but there are some complications. A wall above sits in line with the beam in solid wood-tail planks stacked on top of each



other involved, all your pipes and mudsills should also be examined. Then, eliminate the problem's cause and repair or replace as needed. For more, call a pest-control service; for moisture, dry out the basement. (See "Keeping your Basement Dry," November 1994, p. 45.) An expert should determine a

stiffer and we worry about supporting all that weight during the replacement. Also, because we recently plastered a ceiling in line of the joists above the beam, we're afraid that it will be damaged when the beam is removed. How should we proceed?

Steve Thomson, Brantford, Ont., Can.

I can see why you'd be concerned about the new plaster, but if you don't replace that beam, you'll have much bigger problems due to the ceiling cracks; your only choice is to proceed. First, however, have the beam professionally supported to determine what's causing the wood to become soft and crumbly. If insects or rot bugs are involved, all your pipes and mudsills should also be examined. Then, eliminate the problem's cause and repair or replace as needed. For more, call a pest-control service; for moisture, dry out the basement. (See "Keeping your Basement Dry," November 1994, p. 45.) An expert should determine a

ILLUSTRATION: MICHAEL GOODMAN

ASK NORM

usable size and material for a replacement beam. Don't assume it will also be as big. These days a single big engineered lumber, or steel. The engineer will also specify the size and placement of the support posts and bracing.

Replacing a beam involves several steps. First, seal or wood beams are packed up to the joists on either side of the old beam, then cranked up by its end all the weight is resting on the temporary beams. After the old beam is removed, a new one is lifted into place and the support posts placed underneath. When these posts are secure, the floor is slowly lowered onto the new beam. The weight of that solid wood wall won't matter much; I've seen much heavier beams lifted with ease. If the floor hasn't sagged much, and the job is done slowly and with care, your plaster will probably survive intact. One more thing: This is not a proper job you should do yourself. Hire a general contractor with the equipment and the experience to tackle this kind of work.

PAINT PREP FOR PLASTER

The walls of our 10-year-old house are covered with plaster and multiple layers of old wallpaper, but our reinforcing pipes call for painted walls. How should we prepare the plaster walls for painting after we remove the paper? And what type of paint would you recommend?

Ben Boud, Phoenix, Ohio

The answer depends on the condition of the walls, and you won't know that until you get the paper off. Cracked or crumbling plas-

ter must be repaired before you paint, and if the damage is extensive, you might want to consult a professional plasterer or drywall contractor. But let's hope for the best here and assume that the plaster is in good shape.

To prepare walls for paint, I rely on painting contractor John Deo for advice. He suggests filling a pump sprayer with 5 ounces of wallpaper stripper solvent with a gallon of water, spraying down the wall, then scraping off the paper—and as much paste as you can—with a 3- or 4-inch scraper blade. When the paper is gone, scrape the walls again with the scraper solution, scrape all loose paste residue with a broad scraping knife (be kind and use on drywall) and then immediately wipe the walls down with a large wet sponge. Rinse it frequently in clean water and keep wiping until no paste remains. Give the walls 24 to 48 hours to dry before painting.

Deo recommends rolling on a primer-sealer as the first coat over plaster. Doing this evens out the porosity of the surface so the finish coat will have an even finish. It also creates a barrier to slow the passage of water vapor through the wall, and provides a surface to which paint can readily adhere. On very old walls, a primer-sealer also helps to bond plaster particles to each other, hardening the surface. Deo thinks that oil-based primers generally do all of these things better than latex primers. Also, you can use oil as latex topcoats over an oil-based primer. Latex eggshell finish paints are the most popular choice for walls.

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ASK NORM

because they're more easily cleaned than flat pans and more forgiving of imperfections than glossy ones.

INSULATING GEORGES THE NIGHT WAY

Our two-year-old George does double duty as a woodworking shop. I finished the walls with insulation and drywall, and finished on insulated George last. I'd like to insulate the concrete tile roof but don't want to put in a ceiling. I was thinking about installing rigid foam insulation boards between the rafters, against the underside of the sheathing, and wondering if I need to leave an air space for ventilation. An added benefit of the white insulation boards would be that they'd reflect light and make the place brighter. What do you think?

Mark Brown, Marina Valley, Calif.

I think I have some good news for you, and some bad. First, the good news: You don't need to leave an air space between the insulation and sheathing. The primary reason for this gap is to carry off moisture, but I think a gullyhole will grow out enough to worry about. The other reason to leave a gap is to prevent heat from building up and damaging shingles, but this shouldn't be a problem with your concrete roof tiles. The bad news is that codes require foam insulation on the exterior of a building to be covered by a noncombustible surface, such as wallboard. Check with your local building department to see how he interprets the rules in your case, and prepare yourself for some heavy lifting.

SMOOTHING ROUSED SIDING

Years ago, someone used a pressure washer to remove latex paint from the cedar siding on my house, leaving gouges as deep as 3/4 of an inch in many places. I tried to smooth out the mess with a belt sander, primed the bare wood, and painted it. But the gouged areas still look terrible. Before painting my house again, what kind of fill should I use to fill the gouges?

John Peters, Seabrook, Wis.

Filling small ones is one thing, but the damage you describe would be overwhelming to prepare, fill, and sand. And even if you did, painting contractor John Decker says whether any filler would last

as long as the paint. "You'd probably notice a misadventure gouge," he says. The gouges less than 1/4 of an inch deep, he and I both agree that you're better off finishing the edges with 100-grit paper and a palm sander or sanding block, not a belt sander. (If the old paint has led to it, call a lead-assessment firm.) Then prime the bare wood and paint again. I'll bet 90 percent of the people who go by your house won't even notice the damage unless they make an up-close inspection. And for those deeper gouges, Decker says a coat of primer followed by an exterior sparckle. Sand it smooth, as above, and prime again. By the way, your letter is a good argument for keeping pressure washers away from wood siding.

SETTLING SOME NOISES

What can we do to reduce the noise from an adjacent neighbor? Our house was built in 1920, but it has new windows and insulation.

John Brummett, Lincoln, Mass.

We live next to a power plant on the Chesapeake Bay. Sometimes noise from the turbines, trains, and dump trucks disturbs our sleep at night and disturbs us during the day. Can you suggest a solution?

David Tuermer, Yountville, Va.

If the neighbor of interest I get on the subject is any individual, some aggressive loss of tongue. Last year, I answered a pair of letters that asked how to muffle noise generated inside the house. (See "Rothmans Noise," Ask Norm, March 1999, p. 28.) But when it comes to blocking noise from outside, there are different solutions. The most cost-effective strategy is to block walls are called "flanking paths"—gaps that allow sound waves to enter a house unobstructed. You can stop a lot of noise simply by weatherstripping doors and windows. (You'll improve comfort and energy efficiency, too.) Then pull out the caulking gun and fill the gaps around baseboards, window perimeters, and any other place you'd not set out on water. If the house isn't muffled, I'd have someone sprayed or blown some foam and caulk around it. It takes a blaster that makes up sound. We used expanding foam on walls and ceilings in the master room at the Whittier project—a house quite close to a busy

road—and we only noticed the difference. According to Gary Ehrlich, an acoustic engineer at Wyle Laboratories, if you're windowless or single-glazed, the most effective way to reduce outside noise is to replace them with double-glazed acoustic units, which have built-in storm panes and an STC rating of 40 or higher. But if wholesale window replacement is not in your budget or within your budget, try installing storm windows. Ehrlich says the best ones are well-sealed and have panes of 1/4-inch laminated glass. Researcher to keep them closed, you'd be surprised how many people forget to do this, even in winter.

Masonry walls or concrete basins can block or deflect a fair amount of sound, as long as they are taller than the line of sight between you and the source of the sound. Or how about a small fountain? When you're in the yard, the sound of running water is a soothing way to mask unwanted noise. As for me, well, I'd probably head for my sleep—don't forget that quiet like the whine of a table saw for blocking out unwanted racket.

ASK NORM



SEALING SLATS

The previous owner installed a slat door in the foyer, but he didn't clean off all the good residue before he nailed the slats. What can I do to make this bare look more presentable?

Jim Moran, Johnsonville, Wis.

Before you can get at the grout, you'll have to remove the slats, then contact Joe Perrone. He recommends a hand stripper, available at tile suppliers. They also sell non-toxic grout-hose cleaners, to use once the slats are off, but Perrone says scrubbing the stone with an abrasive pad and white vinegar should do the job just as well. After the haze is gone, and grout slats gone, Perrone favors acrylic sealers with penetrating oil-based solvents. Whatever you use, I'd say the more thing I would about floor finishes. Pay the best product you can afford. This is no place to cut corners. ■

Send questions to Ask Norm, 1010 The House Magazine, 1010 The House of the Americas, 4000 West 10th Ave., 80018. Questions require a return address and require photo proof. Published letters will be edited for clarity and length and may be used in other media.

Harbour II

The new wave in cabinet design.

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WHAT YOU NEED TO KNOW

Garage Door Openers

...he has enough ups and downs with oak, birch to get out of your car to open and close the garage door automatically, remote-controlled cuppers have gone from being self-storing saws equivalent to standard household conveniences. They are now feature electronic eye sensors that reverse the saw if a child or pet gets under the closing door and only begin technology that programs a new cycle with every click of the remote. The heart of the system, though, is the rapid shift phase induction motor, built to start and stop quickly. The GM House contractor Tom Ichniowski demonstrates in purchase area with Chevrolet's model. The remote starts motor and will likely last longer than a 1/2-hp, 115-volt motor, and it will come back.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

Picks up the radio signal from the antenna (bottom) and performs the math.

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Others like systems, but require springs on the garage door to maintain balance.

CONCLUSION

grown naturally without the starting fungus of the common, sourlike-flavored *Aspergillus* variety.

CLARENCE W. SMITH

Wearing power-lens shoes while in the chain-link is worse to wear than flat-soled shoes with a cushioned sole. Worn or dirty shoes connected to a slippery surface.

CONCLUSIONS

And here comes the punchline: In his top of the opinion, and above the story putting a trophy sheep in a mill

[illegible]

Opens in Pull-out door on left side of unit, and Ties on the inside. An attached pull cord disengages the door for manual service.

INTERNAL LIMITS

Reminding the high end of the price of the new system, it adds a second caveat, which is not applied to the gear kit, moves as the system does. When it reaches one of the separate components, and in the middle, it shows the price.

Internet of Things
must show some proof

[illegible][illegible]

1999

transmission

● 本书可作为高等院校、职业院校、培训机构、企业员工的培训教材，也可供从事相关工作的工程技术人员参考。

[illegible]

Number 30 (June 2005) and online page

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Pixel This

With digital cameras, there's no such thing as a bad picture, as long as the batteries hold out

Miles (London, 910, \$1,000, zoom), 1/50 degrees on one pixel for five or six degrees while the camera with the LCD screen remains stationary.



BY LIRA KALIS

There's one tool in The Old House contractor Tom Ito's arsenal that he uses all the time, even though it doesn't drive screws, shove nails, or cut wood: It's a digital camera.

As with almost any camera these days, this one has a flash that allows him to capture those dark, hard-to-catch images of a house where pipes leak and tiles rot. And it has a screen that some kids might use as a ladder to climb around roofs or chimneys. But with this camera, he never runs out of film, or wastes film to be processed, or goes racing through film looking for a usable photo. With just a touch of a button—either on his computer or on the camera itself—he can immediately call up an image to show his plumber or electrician. Or he can e-mail it to a homeowner to show exactly what needs to be repaired or replaced, without having to schedule a face-to-face meeting. "This camera has been a real problem solver for me," Tom says.

For you don't have to be a contractor to appreciate all that digital cameras have to offer. They're as easy to use as my old point-and-shoot, but because images are stored electronically on a flash memory card, every picture you take is displayed instantly on a little LCD screen on the back of the camera. If you aren't pleased with the photo's composition, or the focus, or the lighting, just delete it. No more trying for rolls of blurry, overclouded shots. And if you like what you

PHOTOGRAPHS BY BARRY HOLTZ

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Shingle Minded

With years of hard work and attention to detail, a Midwestern couple achieves their dream



Every renovation has its share of long delays and last-minute complications, unworkable discoveries like rotting beams, expenditures beyond the budget, and endless days and nights. Andrew and Ragan Lind have their share of battle scars, too—they were once there Lake Forest, Illinois, project spanning only to restore the facade and remove a couple of stained walls, and instead found themselves involved in a restoration that kept going and going and going.

When the Chicago-based architect-developer, his wife, and their daughter, Emma, first laid eyes on their future home, they had no idea that six years of sweat equity—not to mention countless late lunches from neighbors and pleas from local aldermen to complete the desperate project—lay ahead of them. It took that long for the couple to transform their lackluster 3,000-square-foot Queen Anne residence into a glowing 3,800-square-foot Shingle style house. Says Andrew, who served as both architect and contractor: "All my prior projects were on spec for the general market; this was the first house I bought specifically for our family. I wanted this one designed perfectly, to our taste. The only way to assure that was for me to make every single decision, to control every screw and bolt. By the end, we'd stepped in deep in the process. It would have been cheaper if we'd just bulldozed the place."

Andrew and Ragan Lind still sit in love with the 1907 house while driving through the neighborhood, they spotted the "For Sale" sign and were beguiled by the whispered speech "It



The original house with shingle siding and a steep roof was transformed into a new, elegant character.

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The Linds (left)—Karyn, Andrew and Emma—started with two dark butcher-block floors, two dark kitchen floors, two dark entry and a master bedroom floor, then built a new one in the addition, with custom floors that echo the windows. The new plastic terrazzo (right) sports a refurbished porch, but the best is the plants on a table that allow the best-looking view of the house.



seemed to possess," recalls Andrew. A tour through the inside revealed that the house had been carved up into apartments on the first and second floors, each with its own entryway, small kitchen, dining room, living room, and bedroom. The third floor was one gigantic, full-size "great room" and the basement, though large, was "dark, creepy, and very damp." Not nearly as enticing as the porch, but not a problem either—or so the couple thought.

See ghosts after purchasing the place, the family moved into a "temporary" apartment nearby, and launched their renovation with an agenda that kept expanding as they went along. By the time they were done the Linds had reunited the two halves of the house, a 1950s remodel had turned it into the new family residence, opened up rooms to resolve the previous layout, upgraded the exterior, and added a two-story 600-square-foot rear addition to gain a large kitchen-cum-family room and master bedroom.

The exterior spruce-up became a far more extensive project than originally anticipated when, during the course of replacing all

replaced a solid arched wooden porch with an open wood railing, and added an extra stairway to the garden.

The Linds pared down and brightened other elements of the facade as well, increasing backdrops of shadow trees and using glossy white beadboard on the new soffits. White bead molding overlooking from the porch roofline around the entire house was added to break up the broad field of shingles. On the addition, the new chimney (for the fireplace in the first-floor kitchen and second-floor bedroom) looks identical to the old brick one in the front of the house, thanks to the hours Andrew spent in the backyard in hot sun installing specimens. Even the kitchen deck, accessed by French doors, was built with an eye toward continuity—a square railing that echoes the one on the front porch, and is tucked into a recess at the back of the house so that it looks as if it has always been there.

Once the exterior was complete, the Linds turned their attention to the modified interior and worked at turning the apartment apartments into a unified space. Andrew created a generous proportioned entryway foyer by removing the vestibule's confining

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110 The second floor of the new address includes the master bedroom, with a fireplace, built-in bookcase, and vaulted-cedar windows. Andrew finished the deck, eliminated the jacking of the floor (left) by removing a wall, widening the hall, and adding bright, airy beams and moldings in the entryway.

SIMPLY FLOORED

Preserving the original wood floors was a priority for the clients, but it was no small feat: They all aligned meticulously due to the beams having settled over the years. Plus, the oak strips on the first level were in great condition but felt springy because they had been installed parallel to the joists. Andrew carefully took up the downstairs boards and ripped up the dark subflooring. Then he jacked up the joists to level them, substituted them to the studs, laid new plywood subflooring, and reinstalled the oak—perpendicular to the joists—after he and Peggie had cleaned away, by hand, 60 years of crusted dirt from the edges of each board. To correct the tilt on the upper floor, Andrew made bearing strips in varying thicknesses and glued them to the subfloor, leveling around on his hands and knees for weeks and checking every place with a level and a surveyor's transit. He installed new quarter-rounds and on the second floor. "There wasn't enough of the original Douglas fir to cover the whole second floor because of the addition," explains Andrew, "so we transformed the boards to the third story and supplemented them with nearly identical vintage heart pine salvaged from a recycled-wood company."



work, and reinforcing the front staircase in order to make a post-and-rail stair and finish it.

Their original intention to "move a few walls" evolved into substantial reorganization of space. A bedroom became a dining room where they established a den/wine room on the first floor. The kitchen, pantry, and dining room on the first floor became a small study and entry hall. On the second floor, a kitchen and laundry were supplanted by a luxurious master bedroom complete with dressing room, his and hers closets, and the original corner tub, moved to nearby. Only family bedrooms, of a newly widened hallway, changed very little—they gained a few built-ins.

The Lunds also lavished much care on the basement as they finished it to house a game room, a media center, a craft room, and a laundry. They went to extremes to keep dampness at bay, excavating a trench around the brick foundation so they could drain, waterproof, and insulate it. Then they laid the bricks with dense silt and filled it back in. "Usually, people would do that for new foundations, but not for one that's 90 years old," Andrew admits.

The done work received as much attention as the larger structural changes. Andrew took stock-ups of various elements, such as the interior's wainscoting and porch column base, then changing them several times before making final decisions. An opening leading into the living room was used "to give it more dimension," says Andrew. Steve demolded up the single brick fireplace, and elegant three-part poplar trim replaced merger-impoverish trim around doors and windows. "We also tried to limit modern elements unless absolutely necessary, as details were used sparingly, and we chose woodier counters for the kitchen, which we make substance than stone," adds Peggie.

Andrew, who works from his office now on the house's third floor, considers the creation he and his family finally inhabit. "We felt terrible about how long it took and what we put our neighbors through," he admits. "Was it an unusual performance? Yes," he adds, "and it drove me nuts. But I didn't want to sacrifice quality for the sake of rushing."

"Anyway, it's behind us now, we were all raised from the local preservation society," he continues. "And the neighbors were so pleased with the house's finished appearance that they have become really friendly." ■



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TALKING SHOP

Up to the Task

BY JORDAN REED

The benefits of having a ladder becomes crystal clear when you're perched high atop a telephone pole on top of a chair on top of a table, reaching out with one shaky hand to unscrew a lightbulb. Ladders, scaffolds, and step stools can prevent an overhead climb—be it searching a can of cans off a shelf or painting the second-story eaves—from becoming a dangerous stack-and-wobble affair.

But because these simple and common climbing tools increase our safety skills, we're sometimes surprised to take greater risks high off the ground. Even Tim Old Moore, general contractor Tim Silva has made room in judgment. "I once leaned a ladder against a flagpole I was repairing," he says. "Forty-two feet up I knew it was a bad idea, so I got down and built a proper scaffold." Some folks aren't so lucky. An estimated 274,600 ladder and step-stool related injuries occurred in the U.S. in 1998. In the interest of safety it's always best to choose the appropriate ladder and educate yourself on the options and techniques meant to keep you out of the emergency room. (See "Ladder Sense," March/April 1997, p. 33.) Since common sense should remain a priority, leave the acrobatics to the folks at Raging Bulls.

"The safer you feel when you're up high, the easier the work."

—Tom Silva, *Fixer* contractor



In the library or kitchen, where doors to a nonclimbing, nonleak other shingles are a handy, some way to living an accessible shelf within reach. The steps on this shingle about 100 inches in take up the first step.

PHOTOGRAPH BY DAVID HANLEY

For exterior chores like cleaning gutters or second-story windows, a 20-foot aluminum telescopic extension ladder allows you high enough. An easily attached stabilizer keeps the ladder from crumpling against eaves and reduces the chance of its slipping sideways.

Pro Choice: Pinned with a stabilizer between shingles, aluminum and wood ladders (and also yourself) whether you're working with live wires or around power lines. The stabilizer is just 100 lbs. It's lighter and more expensive than aluminum, but it doesn't conduct electricity. Wood is also the heaviest and least durable. For the best combination strength/weight/price and light weight, go with aluminum.

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Steeling Home

Metal siding, the shiny, utilitarian stuff of grain silos and Quonset huts, finds a niche in home construction



Swanee David and **Lee Ferguson** show and selling, to their contemporary home in Houston, Texas, to produce a contrast between natural color and the dark green of the previously-matched paint job.

● 王 明 張 學 良 的 意 義 與 影 響

West End, they spent many evenings wandering the neighborhood and pondering how to make their future blend with the area's unique architectural mix. Amid the over-laid streets, they found century-old wood cottages, modern low-slung, metal-sided warehouses and workshops—and a half-down new residence that seemed to be the offspring of the others, homes clad in cheap steel. "The more we looked at steel, the more we liked them," says Derich, a management consultant. She felt the metal houses were in tune with Marshall. The husband, a chemical engineer, was impressed by the material's resilience and fire durability, a particular advantage in Houston's hot, moist climate. So when they built their 2,410-square-foot contemporary, they wrapped it in a skin of steel.

As a siding, steel readily seems the perfect choice for a home. It's tough, lightweight, and malleable enough to form into virtually any shape. But in this country, wood (and its shingles and vinyl imitations) has been the ruling material of choice. It's only in the last 10 to 15 years, thanks to artists and architects at the San Francisco Art Institute, that metal cladding has begun to carve out a niche in the residential market. The house Demuth and Eisenstein created is one of several thousand unadorned houses built across the country. And the price

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CLOCKWISE, FROM RIGHT:
Looking for new sources of design inspiration, avant-garde architects have turned to postmodern metal frame buildings constructed in the 1950s and '60s, a modified growable arena as a home office and guest quarters for a metal-clad tower in upstate New York, horizontal corrugation marks the ends of the steel panels in a house in Del Mar, California.



few years have seen some speculative developments featuring the material—small subdivisions, a high concept project near Dallas, and townhouses in Houston, Austin, Arizona, and San Francisco.

Part of what attracts certain architects and homeowners to metal cladding is that it's one of the few modern cladding products that do not mimic the canons of ornate styles. Architects Nancy McCarthy, of Forest Architects in Sonoma, California, says, "Metal is not trying to be faux or quote or Victorian or rustic or faux chateau. It is what it is." Metal evokes strong associations with industrial form and industrial buildings, probably the only true neoclassical architecture of post-World War II America. "I like metal precisely because it has no connection to the mechanical past," says Catherine Armstrong, the Houston architect who designed the Derrich Diagnostic residence. But for many people, metal cladding just doesn't sit with their concept of home. When he was building his first steel-clad house, Armstrong recalls, people would write on the building permit on the yard, "What is it? House? Office? Warehouse?" But as more sophisticated houses use metal siding, he has detected increased acceptance, or at least understanding. "Now they make up their own term: the 'tin house.'"

Steel, in the form of corrugated, galvanized sheets, first came onto common use as a building skin in the 1930s with the half-barrel Quonset huts used for everything from crop harvests to airplane hangars. Ever since, "galv," as some affectionately call it, has been used for walls and roofs on school houses, warehouses, garages, factories, storage sheds, barns, silos—anywhere someone needed a sturdy structure quickly.

But galv began to rust after 30 to 35 years, making it impractical for siding homes. Today's product is an improved version: silver steel, about 56 of 60 inch thick, dipped into a molten coat of zinc, aluminum, and a pinch of silicon. The leading brand, Galvalume—or similar products like Zincalume, Zentra Aluma, and Galval—are available almost North



Coast. Contractor Catherine Armstrong and Lisa Towner in steel had installed in and repave a surface at the Derrich Diagnostic project. They were the overlapping metal panels with one plastic gasket head versus plastic ones just horizontally and it fit perfectly.

American through home-building and commercial construction supplies.

In new form, the aluminum coating starts out with a mirror-like reflective surface but gradually becomes a gruff, silvery patina that changes as time with each passing hour. "Having this light silvery look, it mirrors the colors of nature," Armstrong says. An optional clear coat of acrylic protects the metal's paper-thin, reflective and prevents it being stained from handling during installation. For a more colorful, less metallic appearance, lacquer looks on a fluoropolymer resin finish. The paint, Kynar 500, is available in several dozen common colors.

In addition to the finish choices, the steel itself comes in a variety of panel-forming profiles. The simplest (and cheapest) is the classic saw-tooth of corrugated steel. Those wanting a sleeker, more modern look may choose from a number of profiles—but sections broken every few inches by vertical ribs. The panels have interlocking joints that help shed water and allow for expansion and contraction.

Derrich and Bergman chose a Galvalume panel 3 feet wide and up to 35 feet long (to extend from foundation to roof without a seam) with 19½ inch deep ribs every foot and two 3½ inch ribs between them. The panels, all 5,000 square feet of them, arrived on a truck loaded together in a stack just eight inches or so. Armstrong hired, installed, and sheathed the house to match, then nailed 1x4 pressure-treated furring strips horizontally onto the sheathing. The air pockets created by the furring provide a thermal break that helps prevent solar heat from radiating into the structure. Next Armstrong fastened the panels to the strips with pre-placed screws.



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M A T E R I A L S

He can't see the steel using a circular saw for weight cuts and a nibbler for complex cuts. The pneumatic two-hand metal-cutter looks like a dentist's drill, "and it sounds like one too. It thunks your teeth a bit sometimes," says Armstrong. Amazingly, cutting the sheets doesn't leave the edges too raw, the cutting machines over the runs as well as over minor nicks and scratches from weld-Moson objects that may strike the panels once they're up—regarding the steel from corrosion, fasteners inside flashing and trim lodge the transitions between siding and windows, doors, and other openings.

The six-year finish is guaranteed for at least 10 years and the paint for 10 years. And once these coatings have been through, the metal can be painted—right over the remaining coating—such a zinc primer and paint (and then repainted regularly like wood siding), or replaced altogether and recycled.

Considering its longevity, metal siding is

relatively unexpensive. For an installed cost of around \$2 to \$4.50 per square foot (of which roughly a third is the material cost), coated-metal siding is significantly cheaper than redwood or cedar (\$4 per square foot and up, depending on grade) or brick (\$3 to \$4 or more per square foot) and only slightly higher than vinyl, synthetic stucco, or hardboard (about \$1.60 to \$2.50 per square foot).

Susan Derich and Lee Bergman have lived with their metal-clad house for two years now. "I like it better and better," says Derich. "It blends well with the neighborhood and has easily withstood Houston's heat, its many weather. Plus, it kept this house cool down and quickly because the metal doesn't hold in the sun's heat. And I never think about maintaining the exterior," she says. The thought of using metal may seem awkward to some people, but "we haven't regretted it a bit," adds Bergman. ★

METAL URGES

If you like the idea of low-maintenance metal for the sides of your house but can't warm to the notion of cold-rolled steel, there are other metals suitable for cladding—most notably copper and zinc. Both easily meet life's expectations because they don't require a maintenance coating to save them from the elements. Instead, they naturally generate a protective patina of patina oxides, which are produced continuously as the metal reacts with air and water. It's these oxides that keep copper's bright shine to bronze then sea-green, and render zinc's steady brightness a frosted gray. Once enough time, other material will eventually replace every bit that could take a century or more.

Both tend to come at a steep price. Both materials in their raw state are more expensive than steel and neither is sold in ready-to-use sections. That means all the interlocking seams, flashing, and so on must be fabricated on-site by skilled workers, which drives the installed cost into the \$5- to \$10-per-square-foot range, 4 to 7 times that of steel.



Left: Above is a copper-clad, an alloy of zinc, aluminum, and copper provides a lightweight material for the San Francisco, Arizona, mountain house. Right: Copper's surface makes it susceptible to staining, but the material is desirable for its beautiful, long-lasting green patina, and gives a copper look to the San Francisco house.



You Got a Permit for That?

Call it a helpful safety inspection or Big Brother watching, but when you build, renovate, or add on, town hall wants to see what you're up to



BY BETTY WING LEE

Most states building permits and you're likely to hear tales of red tape, endless forms, and thousand-dollar fees. Taking one homeowner's own word, various boards and bureaus legend demands onto the project, including, in some cases, a request for a letter of recommendation to help it would have required demolishing the house. Architect Roger van Lieraven, of Bedford, New York, complains about an expense who came to check up on one of his personal projects. "This guy showed up on a Friday afternoon at 4:30. He came to look at the windows, but said the timing, we'd done was so good, even though that had already been approved by his boss. We couldn't reach his boss then, but, thankfully, he backed us up on Monday." And now New York City landlord remembers when applying for a building permit there meant showing up with a cash-filled envelope to convince crooked bureaucrats to give him a project. "We used to call it 'giving to the church,'" he says.

Yet despite their bad reputations, building permits make sense. "People don't realize that it's to their own benefit to get a building permit," says The Old House contractor Tom Silva. Permits both pro-

ILLUSTRATION BY JOHN UELAND



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KEEPING NEIGHBORHOODS NICE

Architect Jerry Zuck, who designed the restored 1918 Masonic convention in Santa Barbara, California, says, "If you're sensitive to what this Masonic word, it's not harmful at all." Use a local architect and carpenter who know the local masons and are likely to design pleasing plans. "Remember from out-of-town who wants to be something overgrown or showing up run out of the town," says Klemmer. Quality's solution: To help make sure you are approved from the board, visit over the neighbors first. "Deal with it in the neighborhood—over-the-board issues can be a whole 'nother story," says Klemmer. —*Steve Meyer* (2)

Even if you complete the project without getting caught, an unexpected renovation can black the sale of the house years later. In some municipalities, before you can sell, you need the building department to issue a "certificate of occupancy" to prove that the house is free of code violations. Halfhearted do-it-yourselfers

[illegible]

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PREVENTING WARPS, CRACKS, AND POPS

S

BY ZACHARY DAHLKE

Along windows, scraping floors, gaps in flooring or even molding—in an old house these defects are referred to as "character." In new work, whether a remodeling job or ground-up construction, they're "unsupportable," says The Old House general contractor Tom Silva. "There's nothing I hate more than to be called back to fix something," he says. "That's why I try to build right in the first place."

Most of the nagging little annoyances that plague a house in the weeks and months after a construction project are caused by wood's expanding and contracting. Like a sponge, lumber soaks up and sheds moisture as it shifts, so the amount of moisture in it goes up and down. The chances of keeping wood fairly in check are about as good as those of keeping a 6-year-old horse behaving on a long car ride. Tom has two basic strategies for dealing with that. Dry dry, vapor-seal (it's not more expensive) seasonal and temperature, and, where necessary, accommodate wood's reflex to rise or stay still. "Everything in a house moves," he says. "You want to make sure that whatever you do, you allow for that movement." Here are some of Tom's best tricks.

FRAMING LUMBER: Nothing good comes of building a house out of green lumber, doubly so when that's needlessly dry. Sails and joints will shrink and split, walls will crack, floors will pop, sliding joints will open up. Floors will squeak. To avoid these unpleasant scenarios, Tom uses lumber stamped "S DRY" grade (a moisture content of 19 percent or less) and lets it dry after it's framed into the house. (He moves kiln-dried wood—labeled "KD"—for accessories.) And whenever possible he installs joists and beams made of engineered lumber, which is usually characterized due to its gluelamination. (See "Buying Good Lumber," *Jan/Feb 1999*, p. 62.) He also keeps his joist-end studs covered, strapped, and all the ground and ready to be used.

INTERIOR TRIM: Tom's standards for interior wood trim are even higher than for framing lumber. His stock comes only from yards that store supplies inside, and he lets it sit in the house for a few days before putting it up. If he delivers the stock isn't completely dry—that is, if it has a moisture content above 8 percent, as indicated by his moisture meter—he'll give it more time to acclimate. "You can get the best material, but if it's not, you'll have trouble."

To repair the inevitable savings in humidity, Tom plans time to keep adjusting surface and nailer into the framing. At wood-to-wood joints, he puts on construction adhesive, wood-to-wood joints get caulked with glue, and masonry and door casings are reinforced with glue and bracing. On rising trim such as crown moldings, chair rails, and baseboards, he'll use as long a joint as necessary to avoid too long joints, but

CRACKED WALLS
If framing members such as studs and joists are too wet, they will warp or shrink unevenly as they dry out, leading to cracks or splits in trim, particularly in corners.

STUCK DOORS
A push that is not held securely in the right place, with enough support of the right length, will give or be rejected or end and those on any of later.

WARPED FLOORING
Keep flooring made from lower-grade cuts of wood and installed while still green tends to shrink, cup, split, or bow as it dries out.

"Using the worst material and the right techniques may work better than if you use the best material and do it wrong."

—Tom Silva



OPEN JOINTS
Unless reinforced with bracing, or too joints that fit perfectly when installed with moisture's humidity may part like a bad seam over the furnace is cranked up.

GAPING MOULDINGS
Joints under joints on trim matching trim hasn't been air-dried or into before installation will likely gap open quite soon.

FLOATING BASEBOARDS
The under the baseboard—4 inches or more—the more likely cracks show around construction, revealing gaps as dry weather.

SCREW POPS
Fasteners that drive 20 inches long or more than 10 inches into or more with screwing nails causing gaps rather when short screws come loose or when long ones stay put in the drywall follows the nail.

Silva Solutions

— PREVENTING WARPS, CRACKS, AND POPS —

when that's not possible, he places his cuts where they will be less obvious from the room's entrance. On straight runs, he uses scrap joists (even cuts that randomly overlap) under the straight butt joints. On inside corners where walls meet at 90 degrees or less he cuts edges, which match the end of a trim piece to the profile of its adjoining piece. "A capped joint is less likely than a joint to split up when the moisture changes," he says.

To keep a hardwood tight to the floor, Tico backs the bottom edge, usually each joint into the studds, and where possible, inserts the joint between floor and baseboard with short nailing. **FLUORENE.** After allowing flooring to dry out in a room before it's installed, adding the joists, squeaks, and warps. It seems, then, that the wood in the room, turns on the heat, and lets it sit for a few days to bring the moisture content down to 6 percent. In summer, he turns on the air conditioning. "We're actually bringing in window units and let them run for a week," Tico says. "Wood that dry needs room to expand, so he leaves a half-inch space around the perimeter of the finished floor, which he fills with the baseboard or shoe molding.

Tico recommends choosing moisture-warp flooring, which won't



To prevent doors from sagging and sticking, Tico makes sure that none of the screws in the top hinges reach into the framing itself. At inside corners, he caps the end of the molding so that it meets squarely with the adjoining piece of trim or framing. Do caps get the new finish made that can keep enough to match in the framing, then with the back side to the wood surface with a nail or screw head.



the top, bottom, and sides of the window so that a new square, level, and plumb, screws through the side trim hold it all in place. For "Pine Ridge" End Sills Window Installation," March/April 1995, p. 42. It's also careful when sealing windows between the joint and the framing—too much can distort the joint. This is a particular problem when working with expanding foam. "Even if it looks like you don't have enough, you've got plenty," he says. "Too has not fast wood of burning." Don't trim a window without testing how well it slides first. If there's a problem, you won't have to stop off the trim to fix it. ■

more as much as under planks. When he does install planks, he opens the ends and undercuts with the same finish he'll finish on the floor, to reduce moisture's migration into the wood. And for descending conditions, such as on a hillside, he puts a perimeter for spot drains—wood—the cut floor likely to shrink or cup.

RYNAL. When finishes like popping, nails and cracking seem like a daunting new drywall, it could be happening for many reasons. A board's frame may not be stiff enough to stand up to screw joints for popping, rymal. The teacher may be working on a dink. As a teacher may have wanted too long to apply the paper tape.

RYNAL. Cause of drywall seem to wear across their own wall long or too short. For inside-back panels, Tico frames it with a stud every 12 inches with 15-inch or 17-inch cross threaded drywall screws, which hold better than nails. Shorter screws cut work loose, and longer ones will end up holding the drywall away from a stud after it dries, creating a pop at the joint where the board is. "People say, 'Let's use a screw that's really long—it'll hold better,'" says Tico. "But in the long run that works against you."

DOORS AND WINDOWS. Perhaps most elusive of all post-construction problems are doors and windows that stick or hang awkwardly. It basically comes down to two factors: frames—too low, too short, and in the wrong place. "Too tops."

The first step in installing doors and windows is to make sure they rest evenly in their rough openings. For a door, Tico places shims behind the jamb—the vertical members of the frame—to keep the door from rocking out of plumb. He makes sure to shim behind the hinges and above and below the strike plate, where the jamb gets the most abuse. "Every time you turn that door it's like hitting the wall with a hammer at the same spot," he says. At the hinges and latch, he screws through the shims, shims, and jamb hold them in place. The top hinge carries most of the door's weight, so he uses two screws (rather than the hinge pin he drives screws that are long enough to penetrate the wall framing. "That'll help keep the door from sagging," he says.

Proper installation is critical for windows, too. To keep the unit from landing when the window framing settles in movement, Tico always makes his rough openings one inch larger in height and width than the window dimensions. Then he shims

the top, bottom, and sides of the window so that a new square, level, and plumb, screws through the side trim hold it all in place. For "Pine Ridge" End Sills Window Installation," March/April 1995, p. 42. It's also careful when sealing windows between the joint and the framing—too much can distort the joint. This is a particular problem when working with expanding foam. "Even if it looks like you don't have enough, you've got plenty," he says. "Too has not fast wood of burning." Don't trim a window without testing how well it slides first. If there's a problem, you won't have to stop off the trim to fix it. ■



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The fully enclosed deck at this home in Palisades, California, was designed by Scott Padgett with a custom set of doors and windows that allow the deck to be opened or closed at any time. The deck is made of white-painted wood and features a built-in planter box and a set of stairs leading to the beach.

Deck Decor

Maximize your enjoyment of this outdoor space by building in benches, planters, and other enhancements

A deck is the quintessential outdoor room; just ask the owners of this spectacular 1,116-square-foot estate that takes in an equally spectacular view of the Pacific Ocean near Los Angeles. It is a place to stretch out and read or listen to music, relax in a hot tub, eat with family and friends, or simply enjoy the scenery. Designing a deck that fulfills every wish demands the same attention to detail as an indoor room. Designer/Builder Scott Padgett, of Padgett Design and Construction in Malibu, California, took every need of the owners into account when he began planning this deck and all its features.

A deck, like a freestanding or attached to your house, is considered a structure, and, as such, it

must conform to local building codes that vary across jurisdictions and cities—and sometimes. In many areas of the country, you may need an additional building permit if you plan to remodel a deck and add such features as a hot tub (as these owners did), grill, or refrigerator because of the plumbing and wiring involved. Seek design details, including wooden planters or benches—may be the experienced do-it-yourselfer to build and install—don't require permits.

Start the enhancement process with a rough sketch and a pencil. Working at scale, says that this is useful as you decide where certain features should be placed in the design of a new deck or the expansion or remodeling of an existing one. Think in terms of, for instance, provide



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comfortable sitting around the perimeter of the deck, especially when accented with cushions and pillows, if high enough—in California, code requires 36 inches—the lack of the bench may substitute for a railing. Benches may also be placed on either side of a built-in or freestanding table or in areas reserved for dining. If you'd like to integrate storage into the design, construct benches with built-in areas of fixed seats.

Planters are a handsome element when used to punctuate or transition a long bench run; they can also occur sets of steps or corners where two sections of railing meet. Fill them with colorful annuals, with herbs useful in outdoor cooking, or with evergreen shrubs or small trees to help create a year-round privacy shield. Finally, consider installing lighting under railings or alongside steps as a safety measure; a balanced mix of light fixtures will also enhance the look and mood of the deck after dark. Thoughtfully designed or remodeled, your deck may be so comfortable you'll never want to go back indoors. ■



TOP The privacy wall is one side of the deck as a terrace and plays into a hand-rail bottom design, which contains subtle shadow lines under 2x6s set flat between 2x6s fast on edge. Similarly detailed pilasters echo the design.

BAR LEFT Perfect back a prefabricated acrylic hot tub 18 inches below the surface of the deck, then covered in with 6-inch wide infrared material so that it would appear to float. The hot tub is supported underneath by a concrete slab resting on the ground.

LEFT As corners of the railing, mirrored pieces of 2x4 reinforced corner on mounted personal table that also contains low voltage lighting mounted underneath.

RAIL DETAIL

In drafting his designs for the renowned railing that fronts the Palis Verdes deck, designer-builder Brett Padgett had to take into account a local building code mandating a maximum of 4 inches of spacing between every rail. To meet code with the least alterations to the Pacific View, he composed the railing using 2x6s, 2x4s, and 2x2s, painted white for balusters and string. A major design goal was a stepped pattern formed by laying horizontal boards of two different widths across a series of vertical 2x6s erected on either side of the supporting posts. The patterned surface dropped-back elements built on the inverted-pyramid table, angled diagonally on the deck. This scheme, vertical balusters support continuous top and bottom rails made of 2x6s set on edge, and a top rail of 2x4s. The pieces immediately above and below the center rail are 2x6s, the easier piece is made of 2x4s. All are connected with 4-inch stainless-steel screws. Where the railing turns a corner (as on the preceding page), balusters are free-standing, which means they have no extra support behind the colored joints.



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The Pro File

GLASS TERRAZZO MAKER

BY KRISTYN KOMARNICKI PHOTOGRAPHY BY PEGGY BLANCK



NAME: John Labalena

COMPANY: Nuc-Art, Inc., in Tucson, Arizona, founded in 1996, fabricates kitchen countertops, bathroom vanities, and floors in made-to-order glass terrazzo.

HISTORY: Terrazzo making—born when 19th-century Italian mosaic workers dropped granite chips into sand floors—evolved, embedding stones, glass, and other hard materials in concrete, then grinding the surface to reveal random patterns. Harder and more durable than limestone or tile, terrazzo has traditionally been used for public spaces, but it's gaining popularity in residences. The 40-year-old Labalena, who had a background in granite and marble work, had always liked the terrazzo he saw on hospital and highway floors. "About 10 to 12 years ago I started making little terrazzo samples for myself," says the self-taught craftsman. "When I tried glass, I saw how it sparkled, creating effects some can't see as well."

THE INGREDIENTS: Labalena derives countless combinations of hues, shapes, and effects from 25 colors of glass chips and 14 colors of marble chips. He blends them with natural gravel, then typically mixes it all into pigmented cement infused with baking soda, a base he perfects because "it ages nicely." Custom agreements include whole azulejos, pyrex (fish's gold), marbles, or legs, along with leers or seas, which are in the pattern before it's poured. "My personal favorite is a mottled beach strewn of quartz and limestone, mixed with glass chips," he says. "It's warm, like stone, and blends well with light woods."

THE PROCESS: Floors are mixed and poured in temporary wood forms on site, then left to set for two to four days. Walls—for counters, desktops, and trays—which need to cure for 10 to 28 days, are cast in the workshop. Labalena grinds the cured surfaces with diamond abrasives, exposing the aggregates to the mix. Though he takes his time with a glossy, smooth finish to prevent them from being too slippery.



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monofilament fishing line, the same way you would dress a sock. Less flexible screens made of metal are best patched by covering the hole with a piece of the same material. In either case, the screen will have to be replaced eventually.

Hardware is one carry package! To each patcher, but Tom saves himself a couple of dollars by using remnants of an old screen. Using a utility knife, he cuts a piece about 1 ft of an inch larger than the tear. Then he frays the patch edges by pulling out a couple of wires, and bends the 8-inch frays to a 90-degree angle (over). After smoothing out the tear, he screws it with the patch. "It doesn't matter which side you put it on," says Tom. "The key is making sure the wires line up with the screen's." Reaching around, he pushes the 1-foot mesh over to grab the screen. "I don't expect miracles," he says. "It's always going to look like a patch."

REPLACING SPUNTED SCREENS Screens with holes bigger than a few inches should be replaced," Tom says, using a metal framed window screen with a tip big enough to stick his head through. Placing the wire on a flat work surface—plywood over two sawhorses—he pulls out the spline, a neoprene cord that holds the screen in a groove in the frame, and examines it for signs of dryness or cracking that would necessitate a new cord. Winding more, he covers the spline and



into the hole. He also screws the frame into the wall. Next, he sticks a 1-inch-thick piece of scrap wood under one end of the screen frame and clamps its two sides to the plywood surface, holding the metal slightly—not enough to create a permanent crease. "Screwing the frame shortens the distance between the ends," says Tom. "When I unclamp it, the frame will pop back and pull the screen taut."

With a utility knife, he slices off a piece of 10-gauge screening from a new roll, cutting it three to six inches bigger than the frame all around. The grooves and spline frames, Tom finds, like glass more forgiving than aluminum. "If you mess up, just take it out and do it again," he says. "Metal stays bent."

Using the cover-ripped roller of a tool that looks like a two-wheeled pusher, he pushes the screen into the groove, making sure to go in one direction all the way around and to keep the screen straight. Next, with the roof's cover-ripped wheel, he pushes the old spline back into the groove, snug against the screen. After releasing the clamps, he trims the excess fabric with his knife and checks for puckers. Shaped to one 10-minute "This can't even be any job," jokes Tom. "Could do it with one hand and behind my back."

REPLACING STAPLED SCREENS Facing the patched screening in Tom's window screen deep is a bit more complicated because the aluminum wire mesh is held to the rails and sides with staples covered by molding strips. So

Tom first carefully prys away the molding, rips out the old screening, and removes the staples with needle nose pliers. He then cuts a length of new aluminum screening a few inches larger than the area to be covered—the top half of the door—and positions it on edge along the entry end. Starting at one corner, he shoots a 16-gauge wire-plated staple every four inches on the end (over), checking that the screen lies smooth after each hit and hammering down any staples that protrude. He then goes back and repeatedly staples halfway between each pair until they're all set in two inches apart.

Next, Tom clamps and bows the door frame, so he did with the window frame. A 16-gauge wire-plated staple every four inches, he releases his hold on the screening slightly—to prevent twisting—and pops in the first staple. Working slowly for puckering, he continues pulling, easing back, and hammering at four-inch intervals, switching with each side between right and left of center. Then he places staples between the existing ones until they're all on each or two spots. Moving to one side, he staples the screen first to its middle position, then working back and forth around this center staple, works his way out to the corners, four inches at a time, taking care that the screen is straight throughout. "If it isn't, you're alive in the corner with extra material," warns Tom. "Then you'll have to do it over."

When all the staples are less than two inches apart and he's finished the other side in the same manner, Tom takes off the clamps, slices away the excess material and cuts the mold up on with a hand saw and 16-gauge wire-plated staples. "Factor out holes and dogs, and the door could last forever," he says, smiling. ■



SCREENS: GARY/STANLEY; FRAME: JIMMY

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5a. *gōa gōat* 5p—

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the details

BY MARY KELLY SELOREN

Before the invention of the electric fan, people had few ways to keep cool during the summer other than a patch of grass or a trip to a local hydrant or water pump hole. The first patent for a portable electric fan earned its price was taken out in 1872. By the early 1900s, though, electric fans were being manufactured on a large scale. Back then, fans were considered luxury appliances," says Mary Tate, executive vice president of the Antique Fan Collectors Association, whose members own 96, well, here "They cost \$30 to \$35, or about as much as a refrigerator cost."

By the 1920s, the electric fan was a household staple. In 1923, the first portable electric fan was introduced by the Emerson Electric Company. It featured a "push-button" start and a "push-button" stop. The fan was also equipped with a "push-button" speed control.

During the 1930s, the electric fan became a household staple. It was used to cool homes, offices, and schools. The fan was also used to cool the air in the room, which was important for the health of the people in the room. The fan was also used to cool the air in the room, which was important for the health of the people in the room. The fan was also used to cool the air in the room, which was important for the health of the people in the room.

fan FARE

Chill out with these hot summer coolers

Several factors can affect the fan's cooling efficiency: power, the type of motor, and the blades. The most common type of fan is the "box" fan, which is a simple, rectangular fan with a motor and blades. The most common type of fan is the "box" fan, which is a simple, rectangular fan with a motor and blades. The most common type of fan is the "box" fan, which is a simple, rectangular fan with a motor and blades. The most common type of fan is the "box" fan, which is a simple, rectangular fan with a motor and blades.

Fans can also be used to cool the air in the room, which was important for the health of the people in the room. The fan was also used to cool the air in the room, which was important for the health of the people in the room. The fan was also used to cool the air in the room, which was important for the health of the people in the room.

Labels with a "FAC" (Fan Air Circulation) label are a good sign. They indicate that the fan is designed to circulate air throughout the room, rather than just blowing air in one direction. This is important for cooling the room, as it ensures that the air is being circulated throughout the room, rather than just blowing air in one direction.

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2. The Modern Fan Company's "Nimble" is distinguished by an up-of-matte glass light, the fan is available with a 42 inch or 52-inch blade sweep.



3. The base of Ben Rusk's "Flare" fan for The Modern Fan Company exhibits a diamond quilt pattern. The Flare can be fitted with a standard 100-watt incandescent or a PL 26-watt compact fluorescent lamp.

4. The "Summer Recess Plus" from Hunter can be installed with or without a down light fixture as one of three configurations—flush with the ceiling, extended with a down rod, or with an adapter for a suspended ceiling.

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Blade Runner



1. Following the manufacturer's instructions and using hardware provided, electrician Foster Marney, of Whelan Electrical Company in New York City, assembles the ceiling fan and its housing, then attaches the blades to the flywheel.
2. Marney threads the wire leads from the outlet box through the hole in the center of the fan's ceiling plate, then uses 3-inch steel screws (and flat washers) to secure the plate to the fan's support frame (as to a point, see "Join the Fan Club") through holes in the outlet box.
3. Once he has attached the fan's canopy to the ceiling plate (and



- support frame) with the screws and flat washers provided, Marney secures the fan body into the canopy.
4. Using wire nuts, Marney securely connects the white, black, and green wires from the fan to, respectively, the white neutral wire, the black (or dark) hot wire, and the green ground wire in the outlet box. He tucks the wires into the canopy, with the wires not connected joined apart. He'll then attach the blades (shown below) and light cover to the fan body. As a last step, he'll check to see that the fan hangs straight and that the blades are balanced.

JOIN THE FAN CLUB

"If you can replace a light switch or wall outlet, you can install a ceiling fan," says John Pearson, vice president of manufacturing for DuckDance, whose "Duckie" fan is being installed in the shop-by-steps on this page. Before selecting a fan, consider that it must hang a minimum of 7 feet off the floor; its blade sweep should clear walls by at least 10 inches. Because of their size, fans are shipped in pieces. Manufacturers include detailed instructions for assembly as well as installation, plus necessary hardware. (Procedures vary depending on model and make; the instructions above provide a general guideline.)

The outlet box in the ceiling must be UL approved (usually an octagonal 4-in.-15-inch box) for ceiling-fan installation. Before doing any work, shut the electrical power off at its source. Remove any existing lighting fixture and disconnect its wiring. Check the ceiling opening behind the outlet box to see if a joist runs across the opening to support the fan, which can weigh up to 40 pounds. If not, you will have to install a horizontal telescoping support brace between the joists. The brace must be tightened to a position that allows the bottom of the outlet box to be recessed a minimum of 1/2 in. on both into the ceiling.

FOTO: JIM K. SMITH

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LETTER FROM THIS OLD HOUSE

Second Thoughts

BY RUSSELL MORASH

This month, the magazine gives our readers a first look at the show's winter project house, Jon Winick's Craftsman bungalow in Santa Barbara, California. But if you compare the first project to architect Jerry Zinner's original renovation plan, which appeared in the April issue, you might suspect that a few things changed in the making. The back wall of Jon's family room now bumps out, and the master bedroom suite includes a newly roomed library area at the head of the suite as well as a reconfigured bathroom layout.

That's not because upstairs Steve Crawford had any trouble reading the blueprint. Changes often occur during construction; it's the natural evolution of translating a paper design into wood and nails. A blueprint is an abstraction—a piece of paper with a 2D inch representing a foot—and it's hard to conceptualize what that two-dimensional rendering will mean at 3-D scale the construction begins. Then the homeowner or the contractor will look around and say, "It's not big enough, or it's too big—or too round or too thick or too whatever. This is also the point at which architectural consideration that might have been overlooked during the design phase—the need to increase headroom in a stairway, say, or bump up a roof to meet height regulations for plumbing—come in light.

Planning a house is not, by any means, the exclusive domain of the architect. A good architect will welcome input, not only from the client, but from the homeowners, who have to live in it. In Santa Barbara, Jerry Zinner and his people like Crawford eagerly because they could participate in the process.

As executive producer of T.O.H., I've seen the design-by-committee strategy succeed one and over. At the show's 1997 Million project, it was contractor Tom Silva who suggested moving the kitchen's windows to better accommodate the work area laid out by Max Morash and John Child. And viewers of last year's *Idolista* series may recall how several of us felt that the long walk from the dining room to the kitchen through the center hallway was awkward, prompting us to install a hidden bar's door leading directly to the party.

Avoiding such last-minute changes is not easy. Many homeowners ask architects to build three-dimensional models to visualize a blueprint's engineering logic on a comprehensible dimension, but models cost thousands of dollars and eat up a large chunk of the budget. Computer programs, like the ones we used in *Naps*, California, in 1999, can give you a sense of what the renovated space will look like, but even sophisticated virtual design tools can't fully capture the feel of reality. My advice is to expect the building while it's still in the framing phase, and make any changes then; they'll be a whole lot cheaper than those made later. ■

Now in his 11th season on this show, executive producer and show designer Tom Morash has seen a lot of last-minute design changes.



PHOTOGRAPH BY RUSS MCCONNELL



The Craftsman-style porch of Jan Winford's house has a beautiful stained-glass door and a window with a white frame. The house is a perfect example of a Craftsman-style house.

HILLSIDE HAVEN



As the finishing touches go on Jan Winford's artfully renovated bungalow, she gets ready to settle in and settle down

BY NELSON HANRED

On a sunny March day in Santa Barbara, Jan Winford stands outside her 1907 Craftsman bungalow and recalls the recent swirl of construction activity. "My horoscope said there would be men in my life," she jokes, "but I had no idea!" As the *This Old House* winter project drew to a close, nearly 40 workers swarmed over every inch of her property—laying the deck, grouting tile, plastering, painting, and digging. It was actually hard to see the house for all the subcontractors.

The show's agenda for Jan's renovation was always ambitious: 12 weeks to add a second story and a garage, as well as to execute a near-total remodel on the original house. But when the winter rains came—14-plus inches—the schedule nearly unraveled. "We were swamped—literally," says contractor Steve Crawford. Once the weather turned, the race was on. Now that the wallpaper, art glass, flooring, tile, cabinets, lighting, appliances, and plants are in place, Jan's house has magically blossomed into an Arts and Crafts showpiece.

PHOTOGRAPHS BY DAVID PETERSON R.
STYLED BY SHARON SHAPIRO

Living Room

Period-style details and furniture lend a plain space a historic air

When Jan Winkler squares the beam ends on her cherry-painted front door, it swings open to a home inspired by the country old Arts and Crafts aesthetic. And on the top floor of an design looks perfectly modern, especially since hanglow-style beams and the Mexican freestone that filled them are back in vogue.

A long beam runs at her feet to the left of the entry from, and, as in most California built-garages, to the place that once was stage. The oak beams a spruce-colored pine pattern poplar in the turn of the century, rust-colored half-round and painted shagel tiles run up each pillar, in the, and are crowded on either side by a large tile panel depicting abstracted designs because of the chief master workers, whom owner Peter Holm couldn't paint down as he usually would, chipping on the floor and repairing off the edges, instead he had to labor over the woodwork like a pretty child, carefully peeling water down to the joints with a cone-shaped tool. "It took them days to make," Jan recalls, raising her hand over the relief, "but it's more beautiful than I could have imagined."

TO IT, master carpenter Norm Akane, who created and installed the woodwork in the sides and frame of the chimney breast, finished off the fireplace. He mounted oak panels featuring four-pawed legs—the design was modeled on a drawing by architect consultant Paul Drouillard—and slipped a large beveled mirror into oak panels with spindles of them. An electrician used as a pair of period-style sockets that received feet-painted the day, then light illuminates the mirror and highlights the quarter-round of the pine wood.

The floor is a mix of antique and modern, one of the many compromises Jan was forced to make during the overhauled remodel. But Steve Crowl's crew did get to install new box beams on the ceiling, a classic hanglow characteristic, with enough

time left over for the plasterers to carve on a finish and coat it with a lime-based wash that hides as it cures, creating patchy coloring and cracking. Over the course of a year, the surface irregularities will lead the walls a picture of age.

Throughout the first week of work, the guest room just off the living room was used as a temporary charcoal, green wallpaper. Philip Oakes came to turn the space into, literally, a seamless display of his craft. There was no easy matter, considering that Oakes was using three different handmade papers—a leafy wallpaper, a circle-and-line paper, and a wide-painted band—all from Broadway & Broadway, which reproduces original Arts and Crafts designs.

Oakes used a special process to give himself as much weight room as possible. First he prepared the walls by coating them with a wood-down wallpaper paste the day before hanging, then waited 24 hours for the surface to dry. "It took my position left in the plaster," he says, "and makes conditions easier by allowing the wet sheets to be moved around longer."

The paper's muted greens, dusty pinks, and subtle neutral glow in the pale light of a glass chandelier that's been recycled from the old dining room. "Now that the room is done," says Oakes, "it looks like a little jewel box." Jan couldn't agree more. "It's come alive. It isn't just to have a guest stay over to show it off."



Light enters from the large windows on the right, illuminating the room. The room is decorated with period-style furniture and decor, including a large fireplace, a wooden cabinet, a sofa, and a coffee table. The room is bright and airy, with a high ceiling and large windows.

Traditional woodwork camouflages modern conveniences

To prevent breakage, place the lamp must be set on a perfectly flat



ADORN: The Indian headdress with the pattern of stars and simple curved lines with colorful-feathered poles were based on Aztec and Aztec-Inca war. The headdress was a symbol of power and authority.

ABOVE: The breakfast area adjoins an informal meeting space. Doors leading to the side yard and back patio clarify the space in golden light, absorbing off the cool tones. LEFT: The writer Peter Phillips casually jogs the perimeter (or an unusual flat design). He toys a 2-inch high, slayed mound of jet metal—concrete, steel, lime, and a phosphorescent agent—within the perimeter of the metal-sloped surface, then fills the crater with polished concrete. The two-mid century modern abridges and cradles. Once the concrete cures, Phillips toys the life you throw money (LIFE, MAY 2006)

To tie the spacers together, interpleak floating mats from the cooking store to the family room. Because it is ductile and easy to put down, Cleverflex chose to install a floating floor instead. It's 1/8-inch tongue-and-groove laminated strips that you place together rather than nailed to the subfloor. Installer Jim Graham used a gypsimer to level the plywood subfloor until the height measured across 10 ft was only 1/8 of an inch. Then he laid down a 6-mil plastic moisture barrier, as well as a layer of carbonizing insulation, a material made from two sheets of 2-mil ply-

Surveying the completed room, Jen concludes that it will be her social headquarters: "Too very informal," she says. "That room will be the center of my conversations."



Master Bedroom

A new, quiet retreat rises above the old first floor

A stairwell at the living room leads to the new second story of Jan's bedroom, an escape from the noise of the street. In the corner of the new room, a large window and a small alcove lead to a closet. "It's a very quiet place," says Zanne, "and the design is very simple and clean."

In the original plan, the stair led to a narrow hallway with a small closet, but Crawford revised the stairway to an open library. The stair by the new L-shaped bedroom was raised into a large bathroom and the former bathroom became an adjacent walk-in closet. "The more we considered the plan," says Crawford, "the more the changes made sense."

In an alcove opposite the bed are a simple writing desk and a large oak desk. "I was going to have my computer up here and use this as my office," says Jan. "But the bedroom is so lovely, I don't want to spoil it with the clutter of work."

The bed is flanked by two enormous windows with a dark leading treatment applied by Steve Handelman. Self-sticking one-piece anodized glass windows look like they have leaded panes. With an angled cut, Handelman stopped the new to length, pulled away the protective paper from an adhesive back, and pressed the window firmly in place. Then he added the glass to make the leading look authentic and antiqued the story panel with an acid wash and finishing wax. "It's a relatively simple process," says Handelman, "and a great way to have a high end look at a fraction of the cost." Throwing each of Jan's bedroom windows ran about \$75.

For those days when the fog rolls in or the winter rain seeps, Crawford installed an innovative gas log fireplace in the bedroom. The space—only one foot deep—was appropriated from the new closet. "It's a great little unit," says T-CLIF plumbing and heating experts for Richard Treibacher. "It's got a built-in blower that recirculates the room air, and a thermostat so you can set it and forget it. Plus, the gas logs are much more attractive to look at than the typical room heater."

Halfway through construction, when wallboard had the first piece of plywood on the bedroom floor, Jan climbed up and saw these crisscrossed, missing out in the ascending row. "I think I'm going to be spending a lot of time up here," she sighed hopefully, as framing hammer banged around her.

No doubt, the room will eventually become the serene escape Jan longs for. But not just yet. The deck beyond a set of French doors still needs work to make it usable. While the side walls have been sheathed and the floor of the deck recently coated in pressure-treated plywood, covered in a traditional Craftsman clasp-like design, the deck floor has yet to receive a sloped bed of mortar that will accept drainage, also which also will return to install 12 by 12-inch built-colored tiles. But when it's done, the deck will be the perfect surface for the bistro table and chairs set Jan plans for the space, where she hopes to enjoy many hours gazing out at the ocean shimmering in the distance.



300 Steve Handelman cuts a strip of self-sticking tape for a window unit, which he then backs the cut into together to make them look like authentic paneled glass. With a rocking chair and a bench reproduction will floor lamp, the entrance to the master suite is a great place to make a home. Jan's built-in writing desk, covered with a self-sticking clear and the decorative-style lamp, is tucked into a bedroom closet.



Jan's bedroom, once a cluttered space, is transformed by a new self-sticking window unit. Just a few weeks earlier, with all the work done in the bedroom, it was a mess of clutter.





Master Bath

Furniture-quality pieces and old-world tiles give the room grandeur

The master bathroom is one of the highlights of the second-story master suite. The bathroom is almost double the size of the one in the original plan, and it feels even larger because a double-height door allows a view into the bedroom. "It's my old deck door," Jan explains. "Including it here saved me some money." But what about its transparency? "If I need privacy, I can close the bedroom door," she says.

The centerpiece of the bathroom is a furniture-quality vanity made from red oak that was finished with three coats of durable catalyzed lacquer. With a standing mirror mounted above it, it somewhat resembles a Mies van der Rohe table.

The tub is fixed with a brushed-nickel faucet, part of a matching set of fixtures made by a single manufacturer that includes the tub faucet, the toilet handle, and the shower door. In addition, the bathtub, toilet, shower pan, and roll-in shower sink are all from one line. The "Emurex" line is a new trend, says TGIH plumbing and heating contractor Richard Trebbewitz. "It simplifies shopping for the homeowner if everything matches," he says, "and since it's all designed to work together, maintenance is easier."

Things weren't so simple for Pete Hollis. The bathroom floor presented him with a special challenge: how to make the transition from the bedroom's 8-inch-high wood floor to the 11-inch-thick slab Hollis opted making up the 3-inch height difference with a deeper mortar bed. "It didn't sit on top of a 3-inch mortar bed because it was too thick," he says. Instead he chose to lay 1/2-inch blue-cement panels over the bathroom's plywood subflooring.

Hollis laid a dash around the room of 3-by-6-inch subway tiles topped by a decorative band with a vine motif. He then filled the joints on the floor and walls with an elegant burnished gold grout to complement the egg-patterned, dusty-rose paper that will one day cover the upper part of the wall. Yet even with the last touch missing, Jan says, "the bathroom is a joy. It's such a pleasure to walk up to."



note: The red oak used in the vanity and tub work was finished with PEX piping, a recent innovation used for the house's new plumbing. TGIH plumbing and heating contractor Richard Trebbewitz got a chance to see how easy the piping is to install and repair. "Once Pete Hollis finished work on the shower stall, which is covered with 1/2-by-6-inch subway tiles, Jeff Jan wanted a large tub, but she decided instead around the red oak vanity so she'd follow in her suit. She settled for a standard-size unit with waterfall fronts."

PHOTOS: BARRY FINE PHOTOGRAPHY



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Exterior

A yard landscaped with native plants and familiar materials faces a breathtaking view

Proctor and Kiley, such, Jon Winkler's original brownstone program view of the Pacific Ocean. And when that fails to satisfy the homeowners, the program view is the landscape architect's choice. Since Van Arta had out for the very first year.

In meeting the plan for the property, Van Arta took into consideration the principles of the early English Arts and Crafts movement, such as the belief in cultivating indigenous plants. "By using native California plants like the Pacific Coast iris, Matilija poppy, and Western redbird," says Van Arta, "we remained faithful to this philosophical approach." She also added plants that were common to original California landscapes, like Cordia alliodora rose, Lily magnolia, and the viscous that inspired much of the house's decorative scheme.

The western metal used on the interior was actually based on a cherished old vine that wound around the former front door. Van Arta will plant two more vines on either side of the new front door, which was relocated—along with the original western—from the left to the right side of the house.

Like the plantings, the landscaping was also designed to complement the surroundings. The steps leading down the hill from the front porch are made from concrete that was custom-tinted a reddish brown to match the soil. (While the steps were still setting, concrete contractor Brian Howe pressed in leaves from the garden to create a subtle pattern.) Ideally, Crawford would have built the existing wall out of sandstone, which is commonly used in Santa Barbara homes, but at the end, the wall and the new garage had to be made of poured concrete stained with a stone finish, a two-inch-thick molded concrete product that is applied like tile.

"Real Santa Barbara sandstone would have been insanely expensive," says Crawford, pointing out that the site is one step to be removed from the old wall way would have cost up to \$1,000 each to replace.

Between the sidewalk and the street, two Western redbird trees shade an area of more sandstone pavers. Just through the house's master is set at their corner, reminding visitors that despite its radical facade, the house is still old at heart. ■



Van Arta's plan for the house's exterior was to use local materials and plants. The main house is made of concrete stained to look like sandstone. The inset photo shows a person working on a wooden structure, possibly a porch or roof.

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The 19th-century Mission-style house, located in the heart of the desert, is a true desert star. The house is a blend of Spanish and desert styles, with a lot of hand-crafted pottery, furniture, and art. The house is a true desert star.

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Used together, adobe brick and mortar made from adobe produce an exceptionally strong wall.



Constructing the Mesa had this experience with adobe brick, which was used in the construction of another house in Tucson, packed here, belonging to David and Julie Smith. Smith expects the house received one of the most positive reviews.

Making Adobe Bricks

For hundreds of years, sand, clay, water, and straw (used to reinforce the structure and slow the drying process) have been the essential elements used in making adobe. Early versions of this Southwestern building material incorporated such things as other organic additives to improve its water resistance. Today, cement is added to stabilize the structure. Maintaining the correct ratio of sand to clay is one of the most important factors in the manufacture of adobe bricks: too much clay and the brick will crack as it dries, too much sand and it will dissolve in the rain.

To make adobe bricks, the ingredients are mixed and poured into multi-brick forms made of steel or wood. (See "Adobe, the Magic Mud," March/April 1995, for a photo essay of the process.) As each group of bricks is poured, the form is lifted off, leaving the bricks exposed to the air to dry.

Approximately 1,000 bricks of the size used in the Stigaldi house, 11 by 15 by 6 inches, can be manufactured in an eight-hour working shift. (There are slightly smaller than adobe bricks used to be, contemporary ones are affected by modern-day construction standards.) The color of the material is determined by the mix of the sand and clay in Arizona. It is a creamy tan, while New Mexico adobe is usually pale pink or white.

Before use, the adobe bricks must cure for nearly a month. When constructing a wall, the mortar used between each course, or layer, is a slurry made of the same components as the bricks used to form the hardened bricks. The consistency of the mix produces a stronger wall that expands and contracts at an even rate, so fewer cracks occur. For extra reinforcement, horizontal 8-gauge rebar-type wire is inserted between every fourth course of dry wall.

which, that was more common to homes in the southwestern United States.

Until two years ago, the Stigalds had been living several miles away in a spec house created by a developer in the area—"which, we considered modifying," says Betty Kay, the wife, but she says they didn't have a choice. "It was a real pain in the neck," she says. "We were not like we belonged there—we weren't really out, it didn't feel permanent." Once they realized they'd have to construct a home from scratch to ensure they'd get a well-built dwelling, except for the lot they wanted, the Stigalds hired Hester Paul, from Arroyo Design Services, in Tucson, to help them visualize and achieve the structure that would suit their taste. Paul led them to architect Tim Greenwood and contractor Eric Mestas. Greenwood meets his clients' needs with the couple, when they showed a wish list that included a full pantry, a laundry equipped with a drop-down ironing board, five bedrooms—and including a 300-square-foot master bath (see "Wrapped in Wood," May 2000, p. 118)—and commodious walk-in closets.

"When I saw how many square feet would be required to build this house," Greenwood says, "I knew it would be important to break down its scale visually, so that it would not look too imposing." He achieved this in two significant ways. First, he modeled roof forms of varying lengths, so the response to changes in elevation at the site and to echo the contours of the mountain range behind the house. Second, he repeated the spaces within by function, assigning each area—such as the master suite and the children's bedrooms—as one wing. As a result, the house gives the impression of a cluster of small buildings needed in the landscape. The positioning of the various components also allowed Greenwood to preserve every precious square inch on the property.

During the argument was just one element in the architect's no-compromise approach to the design of the house and the way it responds to its site. The choice of building material was another. The

exterior, Adobe brick walls, though made in the old style, conform to modern building codes. Inside, The Colapinto porch that runs alongside the kitchen wing and children's rooms forms a shaded loggia.





Tom Greenwood and Elaine Paul designed the kitchen (left) with old-world style cabinets that feature glass-paned doors and simple pulls (right). A neoprene mat is stuck onto the insulator-thick surface of the island.

Simpkins were adamant about having a house that would be up-to-date in terms of comfort, yet merge efficiently in the hot climate. They also wanted the interior of the house to blend into the landscape—not pop out from it. “Ninety-eight percent of the house’s body around here just didn’t convey the feeling we were looking for,” Tom Simpkins says. “We wanted a house that would radiate for several hundred years. If we adopted a historical style of architecture and used indigenous rock or clay—something that came out of the desert itself—the house would appear timeless, as if it had been and could be here forever.”

The Simpkins initially hoped to work with rammed earth, which is composed of sandy soil mixed with 3 to 6 percent cement and 50 percent water and looks like damp earth before it is compacted. How-



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FLOOR PLANS

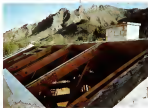
The Stejskals' 5,400-square-foot single-story house rambles out in every direction from the main entry. Public spaces—and the bedroom in the wing devoted to the master suite—face the Santa Catalina Mountains. The wing allotted to the couple's teenaged children (and guests) is located at the opposite end of the house from their bedroom, as is the three-car garage.



The Trusses

Custom-designed trusses were used to support the roof over the kitchen (previous) and the living room (seen here under construction, and on page 116). The system for installing the load-bolt, 20-foot-wide truss system for the Stejskals' 19-foot-high living room used the following:

Architect Tom Greenwood's design was slightly modified on site by a carpenter who drew it out directly on the floor. Then each beam and rafter—made of rough-cut 8-by-8-inch "select structural" Douglas fir—was laid in its place as the drawing and put in its specified length—adding 6 inches at either end to extend to the side walls. The crew then scaffolded each beam lightly to ensure any nail, clip, or surface marks, and braced on a vertical stud.



The ends of each beam and rafter are secured in a hand beam, a continuous concrete collar that spreads the weight of the trusses around the top perimeter of the side walls. In the living room, steel-plate subelements were mortised into the Valwood section of each beam at the point where they meet the beams. The crew joined the sections of each beam with steel bolts in its end, and steel tie rods, which distribute weight over a larger surface to prevent frame members from splitting.

even, because the couple also wanted the ceiling in their home to be a moment of 12 feet high, building with curved earth would have required specially designed and constructed walls—extending from one to two feet at the base to a foot and a half at the ceiling—to support the ceiling and the roof.

Because the construction would have impacted additional costs onto the project, the couple settled on adobe brick as a more economical alternative. Manufactured locally, adobe brick is less expensive (\$11.50 per square foot as opposed to \$14 for the previous), and it allows walls to be built to a consistent thickness of 14 inches, far more slender than those of rammed earth. Still, the 5,400-square-foot house is solid, so per a study, "All that curb—38,000 bricks—will ensure a score of permanence," says Moss.

The density of adobe brick also provides extremely efficient protection from the desert climate. "Adobe," explains Greenwood, "allows the transfer of heat through the outside wall to the inside." Yes, so per his design approach, the architect knew he'd have to prove to local inspectors—whose method for calculating thermal performance is based on wood frame construction—that the house would satisfy the building code. Using a computer program called CALTRANS, which takes into account the thermal mass of adobe,



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Acid Washing

In this Stokely's entry hall, a 48-inch-high waistcoat of elemental concrete meets a plaster wall. To bring out the concrete's color and texture, Jeffert Bernett applies an acid wash to the surface with a solution made up of 3 parts of muriatic acid mixed into 1 gallon of water. The solution removes the thin residue of cement and the particles left on the concrete's surface after the wettest forms were removed. During the washing process, Bernett makes sure not to scrub too deeply if he did, the "black stones" in the concrete would begin to show. As a final step, Bernett brushes on acrylic sealer.

Instead of custom molding, richly detailed wood burl tops, and handboard wainscoting—elements reminiscent of large Arsona houses of the 1920s, which were surprisingly common for their dry and rural locale—Paul achieved a distinctive look for the house. The palette throughout—gray greens, pale yellow, and creamy white—was inspired by the desert and its, like the adobe brick, helps the house merge in with its. There are spots in the house where one takes in several spaces in a glance, as "the colors were chosen to create a flow between rooms," says Paul. "And because the spaces are big, they needed calming tones."

The kitchen, clearly the heart of this house, maintains an echo of the grand old ranch house kitchens of the '20s. "While the room is larger than those that might have been built back then—and it clearly appears so—it retains that period look," explains Paul. For one thing, the center island is inspired by a typical farmhouse cupboard with turned legs and drawers. The choice of wainscoting was also carefully deliberated. The Stokelys did not want cream tile—they'd had it in their previous house and through it outworn. They also wanted granite, which they felt was too contemporary in appearance for this house. When they learned the granite had been used in many older kitchens and was experiencing a revival, they decided to go with it, both for counter tops and for walls. The choice of stone for the floors, adds Paul, "was a nod to practicality." Glad in green limestone squares accented with gold and red, the floor complements the granite—a single stone in Arsona, where "there are sharp white spots of the desert on your face," Paul says.

Like the kitchen, every room in the house is as practical as it is beautiful, a place that serves to reinforce the Stokelys' wish that the house convey a feeling of permanence and stability. Each room is comfortable, functional, well, and built to last. To screen the harmony and balance throughout the house, the Stokelys were willing to make a significant investment in entry detail and to spend as much time as necessary to fulfill their vision. They knew they never could have accomplished this if they had continued to try to quickly their old spec house.

Ultimately, it was the Stokelys' own rising devotion to what Tom refers to as "the project of a lifetime" that proved to be more motivating than their desire to meet all the inevitable construction conflicts. "For a house to feel this special, you have to come to the table and say this," says Elaine Paul. "If you don't do it that way, you are seriously short home. Tom and I have got this vision." The couple agrees wholeheartedly. "Even now," says Peter, "when I walk out of the bedroom in the morning and pass through the room on my way to the kitchen, the place still takes my breath away." ■



he was able to prove to the inspectors that his design exceeded the requirements for Arsona's model energy code.

As an additional energy measure, Greenwood oriented the house so that the rooms with the greatest exposure of windows face northeast, rather than southwest, to avoid a direct hit from the sun during the hottest hours of the day. In winter, the glass on the side takes advantage of the low rays of the morning sun, filling the rooms in spaces with a warm glow. Come summer, copper-coated awnings counter the more intense rays of the afternoon.

As for the interior design, the Stokelys were "intent on building something sophisticated and new, but that had the soul of an old house," explains Elaine Paul. Using an abun-



In the living room, custom hand-crafted, and custom, arched-back Greenleaf designed steel-framed corner windows are key to the "flow" against the white brick columns that support them. Each window opening is 3 feet larger than the frame so the steel can expand and contract with changing temperatures. The frame was set into place and sealed to steel bridle the supporting members that carry the weight of the structure over the windows prior to the installation and glazing of the thermal glass panels.



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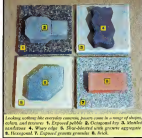


HOMEOWNER'S HANDBOOK

Introduced to the United States from Canada in the 1970s, concrete pavers are all made of the same basic ingredients: sand, gravel, and Portland cement. Mineral pigments impart color, and special additives help prevent damage from freezing weather and de-icing salts. Computer-controlled batching machines measure and blend the dry ingredients with water. The wet concrete is poured into gangs of steel molds, 25 or more at a time, which vibrate while

Pavers

metal plates press down on the mix, squeezing out air pockets. After 15 seconds, the pavers are released from the molds and allowed to cure for 24 hours. The process produces pavers with a compressive strength of at least 8,000 psi, more than twice that of an average house foundation and tough enough to withstand years of heavy traffic and harsh weather. —J.M.



Looking nothing like everyday concrete, pavers come in a range of shapes, colors, and patterns. 1. Exposed aggregate. 2. Exposed aggregate. 3. Interlocking. 4. Wavy edge. 5. 10-sided with grooved aggregate. 6. Hexagonal. 7. Exposed aggregate. 8. Solid.

"Pavers have always been easy to install, and now they actually look good, too."

—RUSSELL ORR

Tools & Materials

TOOLS

1. Shovel for breaking and spreading subgrade
2. Push broom for final clean up
3. Angle grinder with diamond wheel for cutting pavers
4. Steel roller for smoothing sand and gravel
5. Hand tamper for compacting base materials close to the house or along an edge
6. Metal conduit (1/4-inch) for extending the string setting line
7. Masonry trowel for establishing reference points between stakes (lightly colored so it's easier to see)
8. Wood stakes (2-foot), used with trowel for marking perimeters or establishing elevations
9. Level (2-foot) for transferring the elevation of a string
10. Hand sledge for pounding stakes into the ground

Also Useful or Necessary

- Tractor or sub-compact loader for excavating dirt and seeding sand, gravel, and pulv of pavers
- Plate compactor (aka, power tamper) for quickly tamping wide areas of dirt, sand, and gravel
- Site measure for finding a level line or string
- Buller's level & surveyor's rod for establishing elevations

MATERIALS

- Pink: A mix of stone dust and 1/4-inch gravel (important to use, if possible, as hard as cement)
- Concrete sand, for setting bed
- Plastic edging for holding pavers in place
- 12-inch steel spacers for holding edging in place



STEP 1: FIND THE ELEVATION BENCHMARK

- Mark a rough outline of the walkway on the ground. At each end of the walk, string one side (pound a stake just outside the outline).
- Set up a bubble level to travel horizontally (level). Have a helper hold a leveling rod on a benchmark (point, the surface that one end of the walkway will start and be level with). Move the rod's marker so that it falls in the measure of the level's scope. Note the elevation of the marker and then repeat the operation at the other end of the walk.
- Have your helper hold the leveling rod against the stake nearest the house. With your marker at the noted elevation, move the rod up and down until the marker aligns with the bubble in the level. Scribble a pencil mark where the bottom of the rod now falls the stake. This represents the walkway's finish elevation. Repeat this step for the stake furthest from the house.
- Tie a string between the stakes at the marks.



STEP 2: EXCAVATE

- Using the string as a reference, spread how much dirt has to be removed to reach enough grade—the depth below the string equal to the thickness of the pavers plus the sand setting bed (4 1/2 inch minimum) (plus the gravelstone dust base (3 inches minimum)).
- Excavate down to the rough grade level (about), which should be about 12 to 14 inches under than the finished walkway will be.
- Dig two trenches across the rough grade at both ends of the walkway. Put a 4-inch PVC pipe in each trench. These allow irrigation lines or electric wires to be added later without disturbing the walk. Place the pipes a set distance from an oblique feature (like a house) so they will be easier to find. Cap their ends with dust caps to keep out dirt.

TIP: "It's okay to dig a little deeper than necessary, but a base that isn't deep enough will move on you," Roger says.

STEP 3: LAY THE PAVERS

- Stake guide strings directly above where the edges of the walkway will be. Establisher's appearance—the strings are simply a reference mark for keeping the pavers in line—but angle at the string line to be perpendicular to the starting edge (from, the bottom of the front door).
- Begin by placing a few pavers against the string edge and along the line defined by the string, making an 1/2" fit between the face of the L, forming a triangle with a sloped edge. Continue adding pavers until the triangle spans the walkway joint.
- After this triangle is anchored in the work and held in place, each paver is simply set in the next against the others—no pounding or forcing necessary. Light motion into the paver's sides like the quarter out of spacing. "You can lay pavers as fast as you can pick them up," says Roger.
- To make a curved edge, lay the pavers as they extend beyond where you want the finished edge to be. Draw the desired curve on their front. Then take each paver out and cut along the line using an angle grinder fitted with a 4-inch diamond blade. Put them back in position (just) "keep curves to a minimum," Roger advises. "Cutting pavers is slow, tedious, and dirty work."





STEP 3: PACK THE BASE

- Pull up the old starter. At each end of the walk, along one side, pound a stake just outside the excavation. As in Step 1, use the builder's level and the rod to mark the finish elevation on the stakes. Then string between them at the middle.
- Cover the rough grade with a 3- to 4-inch-thick layer of "bank" mix of gravel and stone dust—and spread with rake and shovel.
- Run a plate compactor over the peak (point).
- Continue adding peak in 3- to 4-inch layers (called lifts), spreading and tamping each layer until the base resembles the subgrade—the level at a distance below the string equal to the thickness of the poured slab that of the setting bed—then, a total of 35 inches.
- When the compaction is behind, the base will be as hard and smooth as a sidewalk.

STEP 6: EDGE AND TRIM

- Flare out the pipes.
- Slip the long leg of the flexible L-shaped plastic edging under the pavers and drive 12-inch-long steel spikes to secure. As the spikes rest, they will press in the edging, helping to hold the edging in place.
- Spread about 1 inch of sand or top of the walkway and run the plate compactor over the area twice: once lengthwise, once across. This works the sand into the joints between pavers as it compacts the setting bed.



- Sweep the walk clean, then wash it down with a hose to settle the sand into the joints.

The hollows made of pavers need edging to hold them in place, otherwise they will loosen up.



STEP 4: SCREED THE SAND

- About every 10 feet, drive two stakes into both sides of the base, just outside where the edge of the finished walkway will be. Mark the stakes on one side of the walk for the finish elevation, as in Steps 1 and 3, but mark the stakes on the other side slightly higher (1 inch per foot of walkway width) so the walk will slope and drain away. Along each side of the walk, tie string between the stakes at their marks.
- Lay 1-inch-radius pipe alongside both sets of stakes. About every 5 feet, measure the vertical distance from the string to the top of the pipe, which should equal the thickness of a paver plus 1 inch. Pound the string down or add peak underneath there as needed.
- Spread sand about an inch deep between the pipe over the length of the walk.
- Lay a straight 2x4, the screed, across both pipes, and pull to remove the excess sand (and soil). Fill any low areas with sand and re-screed.



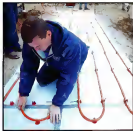
A WALK ON THE WARM SIDE

The owners of this property will never have to shovel snow or spread rock salt; their walkway is warmed by an under-paver, hot-water heating system that melts snow and ice.

Heating and plumbing contractor Richard Ellis installed the outdoor portion of the system as soon as Paveset finished compacting the base. First, he laid down 1-inch-thick boards of extruded foam, to reduce heat loss to the ground. Then he fastened clips into the foam and snipped 1/2-inch plastic tubing into them. The polyethylene tubing, spaced 6 inches apart, carries a warm mix of ethylene glycol and water to the walkway through two loops, each about 240 feet long.

Ellis then buried the tubing in 30 inches of sand while Ellis's crew drilled four holes through the foundation and connected the tubes to a dedicated 30,000-BTU hot-water exchanger in the basement. Ellis says 200 BTUs per square foot is enough to thaw a New England winter.

And this walk is smart: When the snow starts flying, a temperature- and moisture-sensor pipe hidden in the walkway automatically flows up the boiler and turns on the pump. Outdoor radiant heating isn't cheap—it added more than \$7,000 to the cost of this project—but that hasn't stopped some people from installing it, even under driveways. About 10 to 15 years such a system of this house, Ellis laughs: "I don't need one, I've got a paver."



PLANNING AHEAD

- Before excavating, always call a utility locator to mark the locations of the gas, electric, cable, water, and telephone lines. For a state-by-state listing of numbers, go to www.pset.net/organizations/locate-it.htm.
- Set up the builder's level far enough from the work area so it won't be jostled or disturbed. "You absolutely do not want it to move while you're doing this job," Roger says.
- A finished walkway should be at least 24 inches wide, and ideally 3 feet so few people can walk comfortably side by side.
- Before starting, lay out a test row of the pavers to find a pattern and a width that requires few, if any, pieces to be cut.

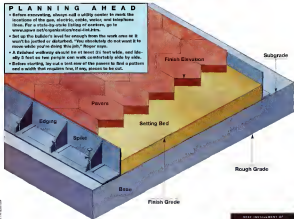


ILLUSTRATION BY JEFFREY

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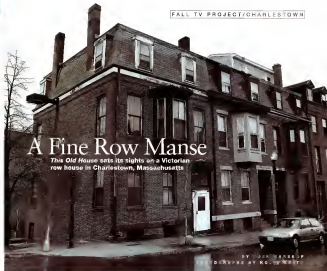
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A Fine Row Manse

This Old House sets its sights on a Victorian row house in Charlestown, Massachusetts

BY JOHN BARKER
PHOTOGRAPHS BY KOLLETT

Newlyweds Dan and Heather Belliveau have a good afternoon. He proposed last March, just after a baby was laid to rest on a concrete 7,000 foot water in the Cambridge River for some old steel during "Your adventure goes on up there," says Dan, a 37-year-old design consultant in Boston. He swapped her again on Valent's Day, when he called her at work with another surprise.

After a year of searching for a home in Charlestown—a historic neighborhood close to downtown yet with affordable and quiet—there's another but found the ideal property: a three-story Second Empire-style row house built in 1855. Heather, 31, a sales and marketing executive, was so set on her bed and bath and loved the place's old architecture, marble fireplace, pocket doors, and staircase banister.

As for the 53-year-old architect, close to his, and partner of 15 years, Dan and Heather would provide the challenge. The decision made an offer on the spot, which was accepted almost instantly. As it happened, the "For Sale" sign stayed on the back facade, and a few days later, This Old House producer Bruce Ivins, missed a when he drove past. He contacted the realtor, heard about the Belliveaus' plan for the row house, and got a tour. Soon after, the building was chosen as the show's fall project. "We've been looking for a row house to celebrate the current revival in city life," says Ivins. Charlestown, Boston's historic neighborhood, provided a perfect example of the national trend. For their part, Dan and Heather jumped at the chance to have the T.O.H. crew resto-

The project was a lot of work and the lot to get around. Dan and Heather Belliveau's house is a row house in Charlestown, Boston's historic neighborhood, and it's a lot of work to get around. Dan and Heather Belliveau's house is a row house in Charlestown, Boston's historic neighborhood, and it's a lot of work to get around.

"The crew can show me how to keep the things that give the house character."

—DAN BELLEVUE, HOMEOWNER



year this house. "They can show me how to keep the things that give the house character—like the rounded plaster corners around the bay window—even as we modernize the systems," says Day.

With help from architects Jack Funch and Linda Netherland, the Bellevues will turn the four-bedroom and bathroom into a rental duplex, they'll remodel the kitchen and bathroom and create two bedrooms in the basement. The Bellevues will live on the two upper floors, after doing a gut-renovation in the kitchen and bathroom on the second and adding a master bedroom on the third. Netherland's favorite part of the project, though, will need approval from Boston's zoning board. She's hoping for a new deck on the second level, which she'll "landscape" with container gardens. "Because we're on a hill," says

Netherland, "we'll have views of the river from the bay and harbor."

The Bellevues have \$300,000 to spend on the renovation, but it's a big job for that budget. The house needs lead and asbestos abatement, roofing, repainting, sophisticated two-levels-two windows, and a new heating and cooling system. "It's going to take discipline, clever solutions, and sweat equity," says Irving. Day is eager to roll up his sleeves, and Netherland has signed up for an interior design course to help her decorate the apartment, which, at 3,300 square feet, will be more than twice the size of their current one. "The whole thing seems to me," says Netherland. "It's going to be a lot of work, and it's going to be a lot of fun." Meanwhile, the couple is already planning the next adventure: starting a family in the new home. ■

Originally the frame of this building, the new house will cover only two apartments on the 13th and 14th floors and will include a new kitchen, bathroom, and a new second-floor entrance.

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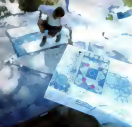
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Creating a low-maintenance, budget-minded garden that would respect far-reaching work views of the Pacific Ocean could demand even the most imaginative of landscape architects, but for Susan Van Aris it wasn't a problem. Asked to landscape the top of one of the two five-cooled greenhouses from the front porch of Jon Winkler's home (The Old House's renovation project in Santa Barbara, California)—Van Aris conceived a garden that was based on traditional geometric patterns, but a creatively composed of gravel, recycled glass, and potted plants. "We needed to do something especially interesting because of the flat surface," she says. "The glass has a sparkling quality that changes color throughout the day, much like the ocean."

Coming up with an aesthetic solution that would enhance the otherwise banal rooftop, Van Aris took into account time-tested landscaping schemes, but she rejected them for the most obvious, practical reason: Any structural system that involves earth—such as a built-in flower bed—typically requires 18 to 24 inches of soil depth, a volume that may pose a weight problem. Plans for rooftop gardens that include extensive flower beds should be reviewed by a structural engineer or an architect to determine if the roof will require additional support. This rooftop could not withstand that much weight.

Two years ago, a fellow landscape architect had inspired Van Aris to investigate recycled glass. "She had used green glass, recycled wine bottle fragments, as a lawn substitute at her own house," Van Aris says. "I immediately thought it would be great on flat rooftops." Van Aris first experimented with the material on the well-out roof of her own office, an unappealing expanse dotted with vents and air-conditioning equipment. She specified the recycled green glass embedded glass that turned out to be ideal. "It had all kinds of green in

LEFT, TOP TO BOTTOM: Working from a computer-generated plan of the rooftop, Jon Winkler's rooftop garden, the landscape crew set glass and gravel and installed a built-in tiered terrace. Landscape architect Susan Van Aris shows off the glass-chip mosaic. Jon's completed garden and in view of Santa Barbara



on higher ground

Two flat rooftops are transformed into serene garden spaces





A silver runs through the garden made of recycled blue glass chips.

is," she says. "Everything from Honolulu to Tokyo." The glass came at a price from the recycling facility, where color-sorted bottles—or other types of steel industrial glass and consumer containers—are cleaned, crushed, and tumbled into smooth pieces about ½ inch in diameter. The tumbled glass for Van Aris's roof was packaged into 50-pound bags, but more often it is purchased in 10-ton drums or by the truckload.

Recently updated, Van Aris's office rooftop garden now boasts a mosaic of white and light blue glass that resembles a field of white and blue glass. Two concrete pots stand in a row at the edge of a wooden deck that slopes the glassy roof. These the planted with succulents, which are drought resistant and, having little root mass, are able to survive the especially warm temperatures that are created when heat radiates off large flat roofs.

At the T.O.M. project house, Van Aris used glass and gravel to create a striking quiltlike arrangement of square-to-five-square, separating the two materials with copper flashing. On top of this gleaming surface, she arranged a compact 12 by 17-foot container garden featuring plants selected for their ability to act as focal points. The scheme is simple. Anchoring the corners of the roof are four potted Nagava kompassa, bushy citrus trees that offer fragrant leaves and fruit. Clusters around each tree are pots of Mexican bush sage, various sage, and golden lemon penstemon, a plant with flowers that prove irresistible to hummingbirds.

near. A people control deck on Van Aris's office rooftop is the perfect spot for silver-blue glass chips. The chips are recycled glass that has been crushed and tumbled into smooth pieces about ½ inch in diameter.

Arts and Crafts-style herbaceous plants stand at the center of the layout. Jan Winfield filled in with seed, to mix back down to the roof for a bit. Adding plants that create levels "creates another dimension of life and beauty and harmony within the garden," Van Aris says.



ALL THAT GLITTERS

At about \$200 per ton, tumbled recycled glass—available through any glass recycling facility—is relatively inexpensive compared to tile or stone. At \$25 to \$50 per ton, the glass is traditionally used to protect flat roofing by creating a pleasing composition of positive and negative space. The materials are separated and contained by copper flashing with a smooth, rolled standing edge, which is nailed to the existing roofing. Asphalt sealant covers the full heels, seals the roof, and forms a bed for the layers of gravel or glass. The glass beads seal to the asphalt and is so wind-resistant as to prevent. As she has gained familiarity with the material, Van Aris has invented new applications. One recent design, for instance, involves the steel on her rooftop. It features ribbons of blue glass embedded in washed concrete walkways that lead away from an in-ground pool, which creates the way water naturally appears and disappears as it flows along in creeks and gullies in the desert.

Right to left: Ace's Pro Series



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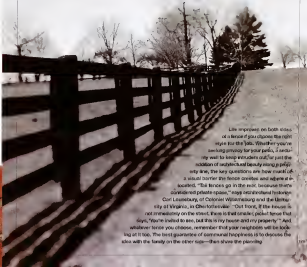
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WOOD FENCES

BY HILLARY JOHNSON
PHOTOGRAPH BY JOHN KERNICK



Like improving on both sides of a fence if you choose the right style for the job. Whether you're seeking privacy for your patio, a security wall to keep intruders out, or just the addition of structural beauty along a property line, the key questions are how much of a visual barrier the fence creates and where it is located. "The fences go in the rear, because there's considered private space," says ornithologist historian Cori Lunsburg, of Colonial Williamsburg and the University of Virginia, in Charlottesville. "Out front, if the house is not immediately on the street, there is that smaller, picket fence that says, 'You're invited to see, but this is my house and my property.'" And whatever fence you choose, remember that your neighbors will be looking at it too. The best guarantee of communal happiness is to debate the idea with the family on the other side—then share the planning.

SCREENING

Fences designed to cloak eyesores or create privacy don't have to be solid, wall-like barriers. Small openings—between louvers or within latticework, for instance—provide air flow, a modicum of visibility, and an appealing look.



Alternating stud

Horizontal basket weave



Vertical louver

Square lattice



Square lattice over diagonal lattice

Board with large-lattice topper

BOUNDARY

A 3- to 4-foot-high fence is good for drawing a border around the property without blocking the view. The most common variations are rail fences, reminiscent of horse pastures, and classic pickets, which can keep a small dog in the yard.



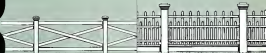
Tule-log picket

Four-rail with bracing



Three-rail

Trellis-style



Kentucky Derby-style

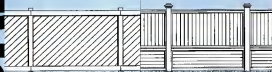
Alternating-height spindle

To safeguard a property, a fence should be 6 to 8 feet tall, offer no footholds on the outside, and have a thin top edge or sharp pickets that make it difficult to grab. Some towns limit the height of fences, so check with the local zoning department.



Rail-less board

Sawtooth board



Diagonal board

Vertical board over horizontal board



Rustic stockade

Vertical board with urn finials

SECRETS OF A LONG-LASTING FENCE

BEST WOODS

Since fences bear the brunt of the elements, only the toughest woods will survive. Roger Cook, *The Old House* landscape contractor, says naturally rot- and insect-resistant cedar, mahogany, or redwood will last 15 to 25 years above ground, 10 to 15 years as posts. Pressure-treated pine is cheaper and set as durable, but Roger warns that it may warp and crack. Bamboo offers an Oriental flavor but survives only about 15 years.

PLANTING POSTS

All wood fences consist of vertical posts connected by horizontal rails (pickets and filler boards are optional). But it's the posts, sitting in moist, fungus-rich earth, that decay the fastest. Setting them in concrete is little help—it holds water against the wood—so Roger uses gravel, which drains the water away. He digs a hole deep enough to bury a third of the post's length and 2 to 4 inches wider than the post, to give himself room to level and align it. Then he tamps the bottom of the hole, shovels in about 6 inches of gravel, and inserts the post.

As he fills the hole with gravel, he tamps around the post and repeatedly checks it for plumb.

Roger fastens rails to posts with hot-dipped galvanized nails, and attaches pickets to rails with stainless-steel ring-shank nails, which hold better than the smooth-shank variety. Nails made of unprotected steel might be a few dollars cheaper, but they quickly corrode and streak the wood with rust. A post cap adds more than decoration;



it sheds water that could otherwise soak into the end grain. Roger says protecting posts in these ways can give them five more years of life, depending on climate and soil conditions.

TO PAINT OR NOT TO PAINT

Painted fences are charming but require scraping and repainting every five years or so, Roger says. And if the paint film isn't constantly touched up, water will accumulate behind any cracks in the coating and encourage rot. Opaque stains don't last as long as paint, but demand less prep work when it's time for a new coat. Transparent stains are the easiest to apply and maintain because they soak into the wood instead of creating a hard film on the outside. Instead of peeling, they just fade away in about three to five years, so there's no scraping required to prep the surface. Roger prefers the simplest option: leaving the wood untreated. "It weathers to a gray that blends in with the landscape," he says.

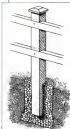




Illustration by Anne Orloff

The right advice can help keep small projects, well, small



ACE



DIRECTORY

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Keywords: *work, stress, coping, organizational commitment, organizational citizenship*



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OUTTAKES
pp. 20-22

Wallpaper hangings: Odele Decorations, Venice, CA, 310-432-2287.
Wallpaper joining machine: Tapco Fix XI 40, new model, \$3,495, available through the American School of Paperhanging Arts, 880-433-1799, www.paperhanging.com/wholesale.html.
For information on a rental or dealer in your area, call National Wallpapering Incorporated, 890-222-1923.

HOUSE CALLS WITH STEVE
pp. 24-26

Lighting: Canadiana lighting pole products, model C144, an insulated boom, Reparatronics Lamp & Fixture Co., 481-400-1908.
Organic metal frame pendant in painted white finish and stainless-steel pendant in brushed nickel finish, Brass Light Gallery, 800-243-5599.
Medium three-light chandeliers, Cherry Tree Designs, 800-634-1348, www.CherryTreeDesign.com.

ASK NORM
pp. 30-32

Our thanks to: Ed Scime, P.E., Director of Construction Codes Department, National Association of Home Builders, Wash., DC, 301-422-6280, www.nahb.com; National Council of Accredited Contractors, Springfield, NJ, 973-364-7838; Gary DeJure, Senior Account Executive, Wyle Laboratories, Arlington, VA, www.wylelabs.com; Joe Petrosi, Projector Tile Company, North Reading, MA, 781-359-6327; John Buh, Wainline & Davis Manufacturers Association, www.wdausa.com.
For information on an address: Environmental Protection Agency, Atlanta Station, 309-369-2101, www.epa.gov/region4/air/airinfo/airinfo.htm.

WHAT YOU NEED TO KNOW:
GARAGE DOOR OPENERS
p. 32

Garage door opener: Chamberlain, HIF1241, \$171.95, 800-323-2226, www.chamberlaingarage.com.

TECHNOLOGY: FIXE! THIS
pp. 38-40

Digital Camera: Kodak 990, Nikon, 1-811-889-9999, 800-443-6489, www.nikonusa.com; DC280, Kodak, 1-811-889-9999, 800-235-6335, www.kodak.com; S10, Canon, 1-811-889-9999, 800-532-3665, www.usa-canon.com; C-2100E, S18, Olympus, 1-811-889-9999, 800-422-6372, www.olympus.com.
Packaging, printing, and spec information: www.shopnet.com.

Our thanks to: Richard Polkowski, Associate Product Manager, Olympus America, Inc., Joe Bunde, Kodak, P.E., manager for digital and applied imaging; Tim Peck, Kodak; Boyd Higgs, photographer.

TRANSFORMATIONS: SHINGLE
MIND
pp. 42-44

Architect/developer: Andrew Lind, 330 E. Wilmamere Road, Lake Forest, IL 60045.

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Built-in cabinets, windowing and fireplaces: Danah Woodwork, Peotone, IL, 847-339-2117.
Floors: Capri Flooring Company, Chicago, IL, 773-653-3315.
Landscaping: Marlene Landscapes, Lake Bluff, IL, 847-234-2132.

TALKING SHOP: UP TO THE TASK
pp. 46-50

Ladder: Aluminum extension ladder #AE122G, 28 ft., \$299, Louisville Ladder Group, LLC, Louisville, KY, 800-566-2511, www.louisvilleladder.com.
Varnish: Sealed Ladder System #12131, 6-8, \$250, Kraton Inc., Kenosha, IL, 877-372-8731, www.kratonladders.com.
Fiberglass step-ladder #F108, 6-ft., \$91, Winco Ladder Company, Gastelle, PA, 724-588-1600, www.winco.com.
Multi-Matic wallpaper ladder #121442, 12 ft., \$150, Kraton Inc.
Ladder Accessories: Quicklock ladder #AC78, \$19, Winco Ladder Company, Ross Road/Trail Stop \$50, Kenosha, IL.
Step stools: Black cherry folding step stool, \$90, Amish Country Furnishings, Dublin, OH, 800-883-1144, www.pchline.com.

MATERIALS: STEELING HOME
pp. 52-57

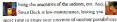
Architect: Cassius Armstrong Architects, 713-852-1344, www.cassiusarmstrong.com.
Bryce McCarty, Project Architect, Sonoma, CA, 707-935-1576.
Photos on p. 54: (Upstate NY house) Walter Chatham Architects, New York, NY, 212-923-2300; (Del Mar, CA house) Cheng Design, Berkeley, CA, 310-449-3272; Photos on p. 57: (Scottsdale, AZ house) Jones Studio, Inc., Phoenix, AZ, 602-344-1841; (Riva L. A. Jones) Lachnick and Lachnick Architects, El Segundo, CA, 310-523-0231.
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Product USA, Inc., Salem, OR, 800-273-7023.
 Cabinet-supplier: Bullcom, Franklin, KY, 818-647-4844, www.bullcom.com.
 Tile-and-rail-supplier: Sherrill, Somers, MA, 607-941-3326, www.sherrill.com.
 Copper-supplier: Canadian Brass & Copper, 900-845-3134.
 Zircon Coppers, Ionia, NY, 800-448-1776, www.zirconcopper.com.
 Our thanks to: Stephen Fox, architect, Houston, TX; Bob Fiero, editor at chief, *Metrol* Architecture magazine.

FINANCES: YOU GOT A PERMIT FOR THAT? pp. 58-62

For more information on adjustable-rate mortgages: Federal Reserve Board "Consumer Handbook on Adjustable Rate Mortgages" at www.federalreserve.gov/publications/consumers.

BY DESIGN: DECK DECOR pp. 88-90

Design/Builder: Jason Padgett, Padgett

Design & Construction, Myfield, CA, 989-635-4278, www.padgettinc.com.

PROFILE: GLASS TERRAZZO MAKER p. 72

Terrazzo maker John Lubinski, Neag Art, 41 Colville Road, Milford 231, Tacoma, WA, 206-416-240-6382.

THE DETAILS: PAN FARE pp. 82-86

Page 82: Gravel belt and gutter fan, Western Mill Fan Co., New Falls, PA, 717-382-4734, www.westernmill.com.

Page 84: Cast-Mexico Stealth dust, Lighting by Gregory, 888-881-3267, www.lightingbygregory.com.

Page 85: Glass fan, Kergway Ceiling Fans, www.kergwayfans.com. Blue fan, designed by Sam Smith, and Naples fan with marble cabinet finish, The Modern Fan Co., 888-388-3267, www.modernfans.com.

Page 86: Glass fan, Hunter Fan Co., 800-448-6837, www.hunterfan.com.

American Fan Collection Associates, Sarasota, FL, 941-388-5513, www.fancollection.com. Museum of the American Fan Collection Associates, Andover, KS, 888-297-0883. Buffalo 2000, Sep. 16-17, Houston, TX; for information call the American Fan Collection Association.

SANTA BARBARA: HILLSIDE HAYDEN pp. 90-92

Landscape architect: Susan Van Aris, Van Aris Associates, Santa Barbara, CA, 805-730-7444.

Hand-glazed tile: Richard Kerr and Mary Kennedy, ETK Studios, Ojai, CA, 805-640-9360.

Tile contractor: Hollywood Tile Inc., Santa Barbara, CA, 805-389-6640.
 Contractor: Stone Crawford, Carpinteria, CA, 805-566-0663.

Subcontractor: J. Graham Installation, San Marcos, CA, 760-716-7533.

Landscape designer: Paul Deuchert, San Francisco, CA, 415-861-6256.

Plasterer: Jose Aldean, Aldean Plastering, Santa Barbara, CA, 805-389-2332.

Plaster mason: Lorie Webb, Ponca's

Gregory Paint, available from Sydney Harbor Paints, Sydney City, CA, 818-633-9394, www.ponters.com.

Page 88: Philp O'Neil, O'Neil Design, Yucca, CA, 310-623-2387.

Hand-painted wallpaper: Redway & Redway Art Wallpapers, 707-946-1080.

Architect: Jerry Zimmo, Architects West, Santa Barbara, CA, 805-866-7141.

Applied brass leaf: Sonnet Handmade Studios, Santa Barbara, CA, 805-962-3109, www.sonnethandmade.com.

Copper contractor: Iron Horse Construction, Carpinteria, CA, 805-484-3634.

Angeleno: Brian McNelly, Santa Barbara, CA, 805-487-7332.

Reproduction lighting fixtures: Reproduction Inc., Portland, OR, 503-251-1800.

Best hardware fixtures: Perini Bros., Jenneville, NJ, 800-332-6677.

Custom: Chaco Center Systems, Kalama, WA, 509-382-2706, www.chacosystems.com.

Four parks: Gladding-Beck Co. vintage flower pot and stand, Wells Antique,

Los Angeles, CA, 213-413-8355.

Kitchen/Vanity room: Trade dining table and Mason table chairs, Restoration Hardware, 888-243-8728, www.restorationhardware.com.

Page 90: Bathroom pottery on shelves, Wells Antique; Blender and counter, Krups, 800-626-4377; Ceramic forest basket, Restoration Hardware.

White enamel container, Le Creuset; 1-877-273-8738, www.lecreuset.com.

Plaster on dining table, rustic basket, wicker chair, painted oak kit vintage, Jordan's House of Art, Wells Antique.

Living room: Rustic reproduction sofa, pillows, and bookcase, Homestead House, Los Angeles, CA, 310-204-2701.

San Arts & Crafts rug, Circa 1950; Arroyo, Los Angeles, CA, 323-963-1510.

Assorted vintage vases on mantle and vintage hand-painted yellow, Kool Kat City, North Hollywood, CA, 818-505-1535.

Mantel bedrock: Modern-style reproduction floor lamp, Homestead House. Rustic reproduction rug and copper bowl, Jordan's.

Deserve looking chair, Spray

books table, and Homestead House put, Restoration Hardware. Rustic reproduction floor lamp and bookcase, Homestead House.

Page 92: Iron art, Wells Antique; Mexican tile, round lamp-shade, Dorcy Street Mexican table lamp, Mason table chair and bookcase.

Iron art, Wells Antique; Rustic reproduction floor lamp, Restoration Hardware.

Page 93: Arroyo, Los Angeles, CA, 323-963-1510; Vintage bedrock series in olive red, Empress, Los Angeles, CA, 323-434-7321.

Mantel bath: Mica lamp, Homestead House; Homestead vase, Restoration Hardware.

Rug: San Arts & Crafts, 310-204-2701; Mantel: 800-626-4377, Krups.

Page 94: Rustic reproduction sofa, pillows, and bookcase, Homestead House, Los Angeles, CA, 310-204-2701.

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Contractor Eric Moon, Wilbur Smith, project manager, Nemo Design & Building Co., Tucson, AZ, 520-297-1111.

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Brown, Exposed public, #EA3038, Wauqua Tile, Wauqua, WI, 800-394-8728, www.wauquatile.com. Composite Inc., CobbleRange 3, Ironlock Concrete Products, Jordis, MN, 800-730-7212, www.ironlockconcrete.com. Marled sandstone, #80-2728, Wauqua Tile. Wavy ripple, DakotaRange 1, Ironlock Concrete Products. Shot blasted with granite aggregate, #GTX-6118, Wauqua Tile. Hexagonal, Halfball Diamond, Range 3, Ironlock Concrete Products. Exposed granite pavers, #5K-1419, Wauqua Tile. Brick, Holland 4x8 in. red, Other Products, San Juan Capistrano, CA, 949-728-0413. Walkway project pavers. Bevelstone large and medium rectangles, Pavers by Ideal, Worcester, MA, 781-934-3290, www.IdealConcrete.com.

Landscape contractor Roger Cook, K & R Tree and Landscape, Shelton, MA, 781-377-6194. Hosing and plumbing contractor Richard Ede, Hamilton, MA, 978-415-4204.

CHARLESTON: A FINE FINE MANSE

Architect Nicholas French Architects, Inc., Charleston, MA, 617-242-7422, www.frencharchitects.com.

BACK TO THE LAND: ON HIGHER GROUND

Landscape Architect Susan Van Arin, Van Arin Associates, Santa Barbara, CA, 805-730-7464. Landscaper, Debra Shaw Landscape, Santa Barbara, CA, 805-487-1530. Glass products, Strategic Materials Inc., Los Angeles, CA, 323-447-4331. National Bird-Finding Society, www.nationalbirdfinding.org.

birdfinding.org. Overlooks no. Craig Telfs, chief naturalist, National Wildlife Federation. Dan Collette, Strategic Materials Inc.

POSTER: WOOD FENCE

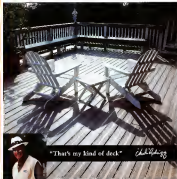
Individual posters. White cedar, Whipple Woodworkers, Whipple, MA, 800-343-6948. Redwood, California Cascade Industries, Sacramento, CA, 916-736-2333, www.cascadeindustries.com. Pressure-treated pine, Southern Forest Products Association, Kenner, LA, 504-443-4444. Mahogany and red cedar, Carpin, Wilson, CT, 203-742-2279. Trex bamboo, Bamboo Hardware, Seattle, WA, 206-264-2414, www.bamboohardware.com.

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SURGEON GENERAL'S WARNING: Smoking Causes Lung Cancer, Heart Disease, And Emphysema.

*The Centers for Disease Control and Prevention's 1997 Youth Risk Behavior Survey reported that among high school students under the age of 18 who had smoked during the past month, 29.8% had usually obtained cigarettes by purchasing them at retail, while the remainder had usually obtained cigarettes through other means.